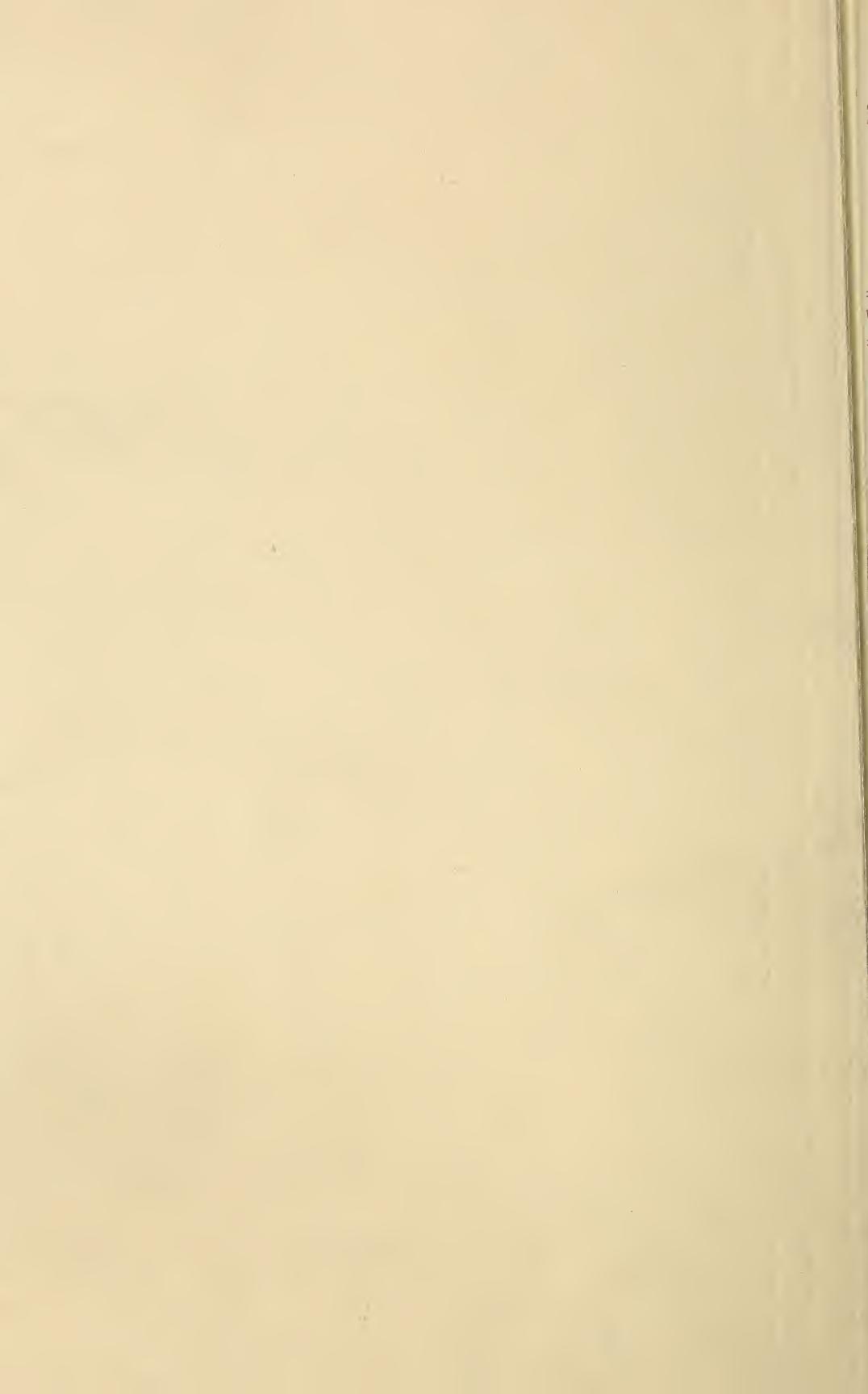


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# GLEANINGS OF BEE CULTURE

A JOURNAL  
DEVOTED  
TO BEES,  
AND HONEY,  
AND HOME  
INTERESTS.

ILLUSTRATED  
SEMI-MONTHLY

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No. 19.



IS THE COW PEA a honey-plant at Medina? [The blossoms contain honey; but ours seem to have a queer way of bearing many pods almost without blossoms.—A. I. R.]

IT IS PLEASANT to note the upward tendency of the market, even if one has no honey to sell. But what a wide variation in prices—from 10 to 15 for the best, in the Honey Column!

IF THESE STRAWS are so late that they get into the last pages of GLEANINGS, you may know that it's because Editor Ernest stopped to play with me on his way home from Omaha. And a good play we had.

BEE-TALK is the best thing with which to fill a bee-paper, and you've gone and filled two or three pages with talk about Medina saloons. But, say; since you've started us on it, please keep us posted how it comes out.

TO THE EXCELLENT ANSWER given, p. 695, Bro. Doolittle might have added that the difference in yield could also be due to locality. Four miles often makes a big difference here, and a friend twelve miles away often has a big yield in the fall when I have none.

"THE NORMAL COMB is  $\frac{5}{8}$  inch in thickness," says W. K. Morrison, p. 684. When it's filled with honey and sealed, isn't it  $1\frac{1}{8}$  to  $1\frac{1}{4}$  thick, counting that bees naturally space  $1\frac{3}{8}$  to  $1\frac{1}{2}$  from center to center? [Your figures are about correct, according to my experience.—ED.]

AS A FOOTNOTE to what is said, page 703, I may say that, after more than 30 years being dry, Marengo now has saloons. I think it a moderate statement to say that I've seen more drunken men on the streets in the past three months than in ten years before. [Thank you, doctor, for this fact. We will use it as one of our bomb-shells in our temperance fight.—ED.]

EDITOR HUTCHINSON has always loyally kept the Washington rules of grading flying at the head of his Honey Column, but now admits that he never practiced them. He puts fancy and No. 1 all together. So do

Boardman and Koeppen. Lots and lots probably do the same thing. If I knew there were enough of them, I'd confess too.

YOU WOULDN'T NEED to send a gross of cups to Mr. Wylie, friend A. I. (p. 701), if he would do as they do "in this locality." A tin cup at a public drinking-place has a number of holes punched in the bottom. You can get a good drink with it, but it isn't worth stealing.

THE CRITIC of *Review* says, "Helpful criticism is more than meat and drink to me." I have considerable appetite "along that line" myself, but it's generally agreed among doctors that food is more nourishing, if agreeable to the taste, and I wish, Bro. Taylor, you'd study the art of cookery enough to give us something more agreeable to the taste, and less like medicine. [See editorials.—ED.]

I ASKED in a Straw, p. 573, whether it was fair to the worker, a being perfect in its place, to call it an undeveloped female. Critic Taylor says, "It strikes me as entirely fair. The fact that she is well developed in some characteristics having no relation to sex surely can not help her out as a female." You're right, Bro. Taylor; she is an undeveloped female and a perfectly developed worker.

I DON'T KNOW for sure, but I have the impression that sometimes the bees seal up a queen-cell earlier than 8 days from the laying of the egg. At any rate, I've been sometimes surprised to find a very small larva on tearing open a sealed cell. If Mr. Wardell is still rearing queens, perhaps he could tell us how long is the larval period in a strong colony. [The queen-rearing season is nearly over at Medina, but I will ask Mr. Wardell to take some observations.—ED.]

"THE TROUBLE IS, so many farmers keep a few bees, . . . and those who make it a business have to suffer for the carelessness of the slipshod farmer bee-keeper—page 691. Editor Abbott ought to labor with F. Boomhower. [In Boomhower's locality, it seemed to me as I went through it that every farmer kept bees. Sometimes he would have a dozen colonies—more often thirty or forty. One might travel for miles in and about our vicinity, and see no bee-hives about the farmers' homes. This is a case where locality has every thing to do with the matter.—ED.]

EDITOR HUTCHINSON is right when he says: "Language that is pure and perfect is certainly to be admired. A journal, the columns of which are plentifully sprinkled with slang, can not, of course, receive the respect of one that uses choice language. At the same time, let us not forget that criticisms on this subject may become hypercritical." It's a pleasure to know that no leading bee-journal is plentifully sprinkled with slang, and it is to be hoped that Editor Hutchinson will abate the "hyper" in his critic.

"DR. DUBINI expresses surprise that so common and cheap a material as turf is never spoken of for smoker-fuel in North America. So far as I know, that substance does not exist here."—*F. L. Thompson, in Review.* I think turf is the same as peat. I've had it by the wagonload, and at one time A. I. Root sold it as smoker-fuel. [Yes, we sold peat for a number of years as smoker-fuel. I think we have a little of it left, but so far as I know there is no call for it now. Planer-shavings or hive-cuttings or rotten wood seem generally to have the preference among bee-keepers, largely because of the availability of the articles mentioned.—ED.]

THE EDITOR beats me in clearly seeing in his own mind W. K. Morrison's hive, p. 685. It seems the sections ought to be spaced apart to let the bees up; but the way Mr. M. speaks of  $\frac{7}{8}$  comb in  $1\frac{1}{4}$  sections looks just a little as though they were crowded together. I'm also mystified by his saying that only full sheets of foundation must be used, and then saying he puts two small triangles of foundation in each section. [The reference to  $\frac{7}{8}$  comb in  $1\frac{1}{4}$  sections rather led me at first thought to believe that in your mind's eye you saw more clearly than I the construction of Mr. Morrison's hive. But how could bees get in and out of plain sections when crowded up tight together? Methinks my mental perspective of the Morrison hive may not be incorrect, after all.—ED.]

"IT STANDS TO REASON that the fence gives better ventilation," quoth ye editor, p. 691. Are you sure about that? Freer communication, surely, but how better ventilation? The air can pass only up, down, or sidewise in the plane of the face of the comb, so how can an opening allowing communication transversely help ventilation? [Surely, better communication as well as better ventilation. Suppose, for instance, that the several rooms of a house had communication with each other by means of one door each. There would be a certain amount of ventilation—that is, change of air from one room to another. Now, suppose again that there were several doors to each room. Would not the ventilation be freer as well as the communication? A few reports so far seem to indicate that, with plain sections and fences, there is more rapid ripening of the honey and sealing of the combs.—ED.]

BRO. DOOLITTLE, page 694, gives a story to show that I ought not to back down for his stern "No." Well, notwithstanding some shakiness of the knees, I'll try. Among those

who say five days for the larval state stands Dubini. T. W. Cowan, in the 14th edition of "British Bee-keepers' Guide-book," page 10, gives "Time of feeding the larvae" as 5 days for queen and worker, and 6 for drone. Years ago 17 to 18 days was considered the time for development of queen. Nowadays it is brought down to 15. [If I make no mistake, Mr. Doolittle conducted two experiments, in both of which the results favored six days. Now, perhaps if he had tested the matter a hundred different times, the average might have been nearer five than six. I am under the impression that Mr. Cowan, in drawing his conclusions, did so only after a large number of tests, and from these he drew a general average. A careful and accurate scientist will not usually make a basis of calculation on two experiments. He learns by experience that such a course, while perhaps leading to an approximately correct result, would not lead to what is called scientific accuracy. I know that good authorities disagree; and, really, I do not know which figure is correct.—ED.]



#### HOW WE CAME TO USE LARGE HIVES.

More Honey from the Large than the Small Hives.

BY C. P. DADANT.

One correction is needed to the former article, p. 683, at top of page. It reads :

"It would seem that the size of the hive has something to do with the prolificness of the queen, R. L. Taylor to the contrary notwithstanding; for as Mr. Taylor, in one of his late articles, asserts, not one queen in a hundred will lay 2500 eggs daily, continuously, for a certain period. In the same manner, L'Abbe Colin, who used still smaller hives, says in his book," etc.

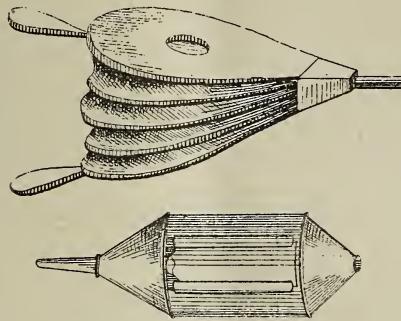
This is what I meant to say :

"It would seem that the size of hive has something to do with the prolificness of the queen, R. L. Taylor to the contrary notwithstanding; for as Mr. Taylor, in one of his late articles, asserts that not one queen in a hundred will lay 2500 eggs daily, continuously, for a certain period, in the same manner L'Abbe Colin, who used still smaller hives, says in his book: 'We can not estimate at more than 600,'" etc.

I promised you, in my last, to give an account of how we came to use large hives. This is not needed as a practical argument, but it will illustrate the necessity of making many trials before coming to correct ideas and practical methods on any subject.

Although my father had kept bees for years in France, he was still in the dark on many points of bee culture that are to-day clear to every bee-keeper. Bee-keeping was conducted under great difficulties. Movable-frame

hives were scarcely known; the bee-smoker, the only kind known, was a cumbersome-looking two-hand bellows, with a sort of horizontal tube filled with punk, rotten wood, or rags, at its extremity, and these bellows had to be



kept constantly going or the fire went out and had to be relighted. There were no honey-sections used or known, but a square glass box instead. Comb foundation was unknown; and for a guide in the supers, only small pieces of broken comb were glued, fastened with hot wax. The extractor had not been invented, and he who wanted liquid honey must strain it through a cloth by crushing the comb.

We had come to America to grow grapes and bees; but the grape-growing business was then thrown into the shade by the prevalence of mildew and black rot. A friend of ours gave my father two hives of bees, and this furnished him a start in the direction he followed. He bought the book of H. A. King because it was cheapest, and money was scarce with us. He then made a hive that followed the ideas of both King and Debeauvois, and had frames nearly square, for this was the size recommended by both these writers.

A little later he bought Quinby's *Mysteries of Bee-keeping*, and, being struck by Quinby's method as superior, and also having read of Quinby's great crop of honey, some 20,000 pounds, which was sold at about 30 cents per pound, he made a number of hives after Quinby's pattern, with eight frames, 11x18, inside measurement. These and the King hives, frames 12x13, were kept side by side for a year or two. The supers used were glass boxes 5x6x6, composed of 4 wooden posts, and top and bottom of thin lumber, with glass all around. But these supers were not sufficient; and having read, in the *American Bee Journal*, which had just begun its publication, that Jasper Hazen used side as well as top supers, he manufactured a number of Quinby hives with a capacity for 15 frames, using one movable division-board on each side of the brood-chamber during the spring and fall, and filling the space with supers, such as are mentioned above, in the summer, and with straw or forest-leaves for winter. He even manufactured several hives with a space in

the back capable of holding six of those small glass boxes, or three brood-frames. A number of these hives are still in use in our home apiary.

#### SIDE STORING A FAILURE.

As a matter of course, the side storing, lauded by Jasper Hazen, was nothing but a "fad," and turned out to be an entire failure. The bees worked in the side supers, but never finished them if they had any room at all elsewhere. It was a move in the wrong direction. How many such moves are taken before we get the proper methods! How many new-fangled ideas, or old ideas renovated, are boomed and doctored upon, and systematized, like inverting, for instance—systems on which books and books are written before they are realized to be worthless!

Well, in this case it was all a mistake; and as we had the hives, and they were well made, and could accommodate any colony, from the weakest to the largest, we used them. It is probable that, if Mr. Taylor or friend Hutchinson had under his control a few such hives, he might be unable to resist the temptation to increase the room for such queens as would be likely to be somewhat crowded on 8 combs. And if they did this, and had as much room as we did, they might get to think it was a good thing. At any rate, this was how we found that a queen could lay, on an average, over 600 eggs per day, as per Colin, or over 2500 as per Taylor. And when there was honey, the swarm weighed more than 6 pounds, as per Colin, and the crop was more than 14 pounds.

By and by the American hives which had been built to contain only nine frames were torn down and rebuilt with a capacity of 13 to 15 frames. This was overdoing it, will you say? That is true. But how were we to know what a hive of bees could do till we gave them a chance? Don't you think the reason why Colin thought a queen did not have a capacity for laying over 600 eggs per day was owing to the small size of his hives?

With the large hives we found queens that had a capacity of 4500 eggs per day. Exceptions, you will say? Certainly; but it is a very nice thing to give a chance for those exceptions. And I hold that you can not do this as fully with a two-story eight-frame hive as with a hive that may be enlarged, one frame at a time, till it contains all the room that the queen may need. Your eight-frame hive gives her too much room at once when it is doubled in size. If the season is a little cool, there is a chance of delaying the breeding by chilling the combs. The bees will then concentrate themselves upon the brood and keep it within narrow limits, for the queen will seldom go out of the cluster to lay.

Does the number of eggs that we have mentioned seem incredible? Let our reader try an observing-hive. He will learn many things from it; but one thing he will learn is that a queen can lay six eggs in one minute. Take a pencil, and figure how many eggs that would be in twenty-four hours, if she kept it up at this rate. Actual trial having convinced us that large hives are good, we will now say

how we came to try the small ten-frame L. hives side by side with the large hives.

For a number of years we imported bees from Italy, and we were in the habit of selling colonies with breeding queens every spring. This was 20 to 24 years ago, when bees were scarcer than they are now. Our Quinby or American hives were not so suitable for sale as the Langstroth, for the great majority of the bee-keepers of this country were already using the Langstroth hive, and it thus became necessary for us to use these hives in order to be able to furnish them to our customers. So, having accidentally undertaken the care of an apiary of 110 colonies in Langstroth ten-frame hives, that belonged to a friend, we decided to build a number of such hives for our own use, and temporarily keep them in our apiary. This was done, and we had occasion, in this manner, to test about 60 colonies in ten-frame Langstroths, which were, a little later, placed side by side with a number of our eleven-frame Quinby hives. This ended in the transfer of all the colonies into large hives, subsequently, after perhaps eight or ten years of trial. Are we deceiving ourselves in the results? If we are, so are the farmers on whose places these out-aparies have been located; for they universally say that they see the large crops come off the large hives.

In my next I will speak of the change that has taken place in Europe in the size of hives.

Hamilton, Ill.

[Referring to the last paragraph, in which Mr. Dadant says he secures more honey with the ten-frame Langstroth, and that his farmer neighbors round about him secure the same results, I take pleasure in stating that I have talked with some of these same neighbors, and their universal testimony is to that effect.

Mr. Dadant seems doubtful about two-story eight-frame Langstroth colonies being able to rear as much brood as the large Quinbys. I grant that there is something in his point to the effect that, with the large hives and large frames, the queen-breeding capacity can be extended *more gradually* than with the two-story eight-frame Langstroth. But I have usually found that, when the lower hive was filled full of brood and bees, the extra story given at one time would be none too big. But I am frank to acknowledge that I wish the eight-frame hives were more contractible and expandable than it is. I have, therefore, made use of extracting-supers of half Langstroth depth whenever it seemed that the whole Langstroth brood-nest would be too great an increase in hive capacity at one time.

Mr. Dadant makes one point that will bear a little emphasis; namely, that the queen's breeding capacity is regulated somewhat, at least, by the brood-nest.—ED.]

#### RAMBLE 153.

A Visit with W. T. Richardson.

BY RAMBLER.

"Hello, Sall! how do the zephyrs strike you in the tree-tops?"

That is just what I felt like shouting; but I put a brake upon that inner nature that is sometimes liable to be unmannerly and lead a fellow into trouble. I desired to shout because I espied a woman up a tree.

Now, if there is any one place where a woman looks as though she had mislaid her sphere it is when climbing a tree; there is nothing graceful in the performance. Maud Muller up a tree would never have captured the judge. This woman was trying to add grace by sawing off a limb; but there was a sad, scared, hesitating movement that would not allow her to get beyond Kipling's characterization of woman—"a bone, a rag, a hank of hair."

When I drew a little nearer I was glad I curbed my desire to shout, for there was a big man at the foot of the ladder. I silently passed by on the far side of the road; for a man who will send a timid woman up a tree to saw wood is fit for strategems and spoils and various other unaccountable things, and I did not wish to be spoiled in that lone place.

This incident occurred while I was on my way up through the San Fernando Valley. This valley stretches away from the east portion of the city of Los Angeles thirty miles to the north, and it is fully twenty miles in width. Large grain-ranches are located here. The Lankersheim ranch contains some thirty-five thousand acres; and, though this journey was taken early in March, the lack of moisture was beginning to make itself felt, and the great grain-fields were looking sickly.

I had a few gates to open, as we always do on these big ranches, for it is cheaper to put in a gate between the great fields than it is to fence the road. I finally drove into the plaza of the buildings of one of the ranches. In front of one of the buildings two ranch hands were lounging, and deriving comfort from cob pipes. I felt free to say hello to these fellows, and, by way of a joke, I said, as I drove straight up to the building, "Well, I see I have got to the end of the road." But there were no jokes in those fellows. With nothing to do upon these ranches the prospects ahead were serious for them, and they viewed everything else in the same light.

"And is it after driving through gates and corrals that yer expect to find the end of the road in this one?" said one of the men as he jerked his pipe from his mouth. "Yer mistaken, sir; turn to the right, and open the gate ye'll run against, and proceed, and yer'll soon be on the county road, and see to't yer don't git into another corral."

As I humbly proceeded I moralized somewhat, and remembered that a friend had told me that dry jokes were always a total failure in a dry time, and that the most successful jokers carried along a bottle of bonhomie with which to irrigate their jokes. From his manner of telling it one would suppose they drank the bonhomie; but I surmise it was used on the pocket handkerchief merely as a nasal stimulant. The moral I deduce is, never carry a bottle of any kind, for there is more bonhomie in a canteen of pure water than in all of the bottled concoctions of man.

At the head of this valley I find the little town of Chatsworth. There are quite a number of bee-keepers here, and the hotel-keeper where I ate my dinner had a very good word to say respecting them. The most of them were engaged in the fruit business as well as in securing honey.

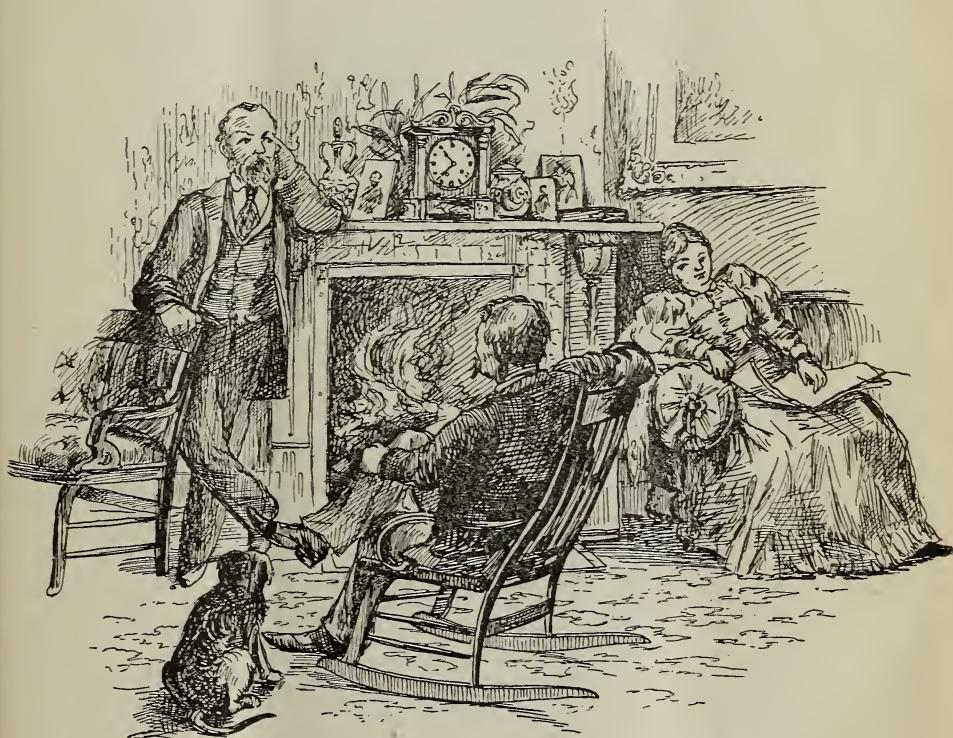
Here we leave the valley and climb one of those passes that lead over into another valley. These passes with their winding roads are always interesting to the traveler. The rocks are piled in rugged masses; deep gorges yawn, and yonder is a towering peak where the eagle has its eyrie, and where man seldom climbs.

It is somewhat lonesome traveling over these passes alone. You may travel for hours and not meet a soul. The slow gait up one

ing in great circles above, and ready for the ripening of the carcass. Who knows but the famished cattle saw them and knew the fate that awaited them? Poor things!

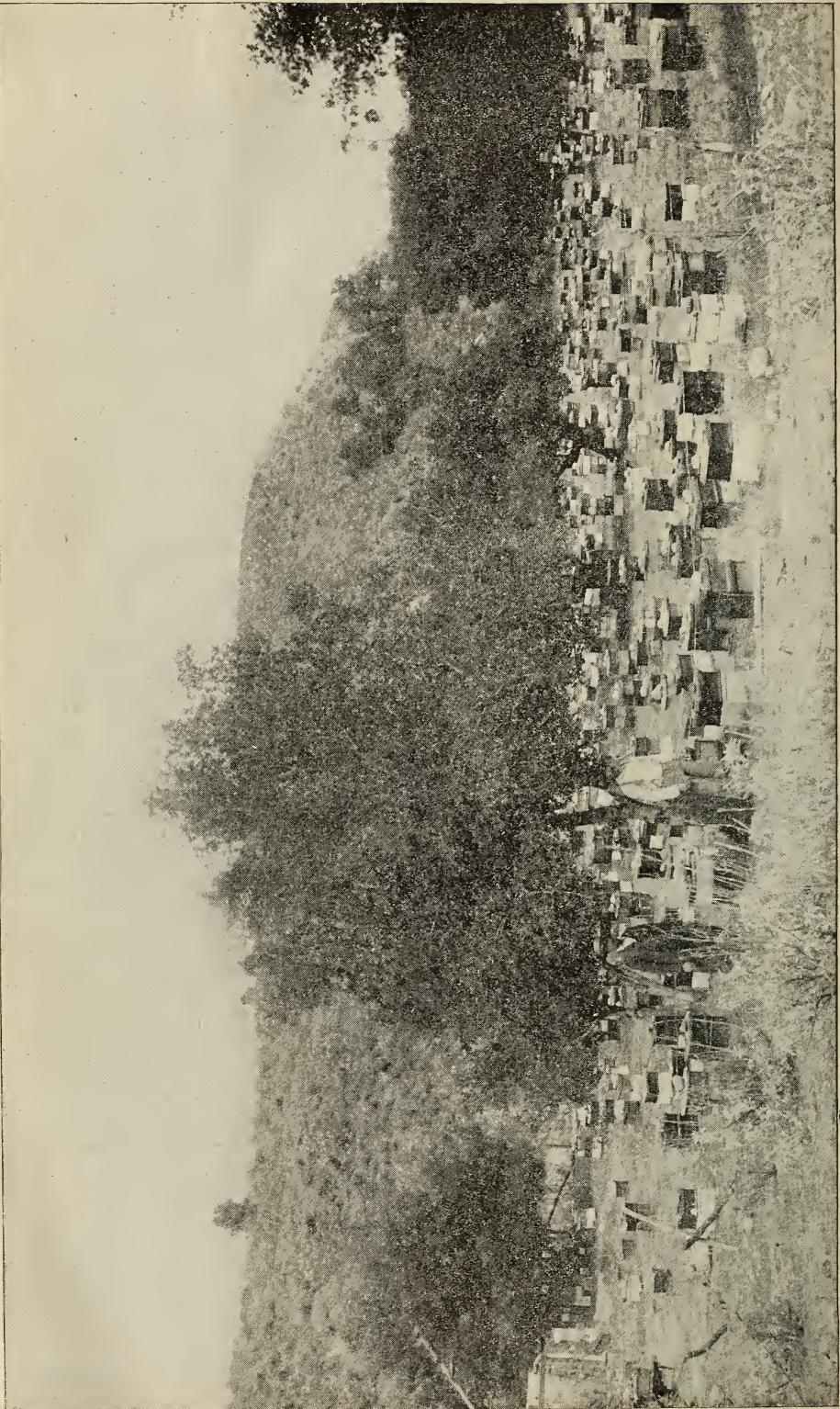
My objective point in this ramble was the home of Mr. W. T. Richardson, the most extensive bee-keeper in Ventura Co. At the little collection of houses known as Simi I found a little oasis of green, caused by the reviving influence of a few artesian wells. A very cheerful man here directed me to turn through a certain gate and travel another mile or two, and I would find the residence sought for. "You will find the country well gated," said he.

I told him that I had found the San Fernando Valley well supplied in that respect.



side is followed by a more lively one down the other side. I find myself in the noted Simi Valley; and if there are evidences of a dry season in the San Fernando it is greatly intensified in the Simi. While grain did start in the former, there was none here; and the seed that had been sown had been thrown away, and the fields were as barren as the road in which I was traveling. The few stray cattle to be seen seemed to have become dejected in their futile efforts to supply themselves with food. They seemed to be ready to lean their poor bodies against a tree for support. There was not spirit enough even to switch the tail at the obtrusive fly. The turkey buzzard was on the death-watch, swing-

"Oh!" said he; "we can beat that valley out of sight." And, indeed, I found this a truthful saying; for in the next two miles I opened gates innumerable; and as the shades of night began to gather I came near being discouraged. Just as I was ready to cry over the prospect of staying out all night in the brush, a house loomed up through the bushes; and, for a wonder, it was inhabited. A kind lady told me that Mr. Richardson lived in the next house. After opening a few more gates I was happy to meet my friend in his own corral, and the anxieties of the evening were over and promptly forgotten. As the evenings in early March are cool we gathered around the ample fireplace. This is a country where



ONE OF W. T. RICHARDSON'S APIARIES, SIMI, CALIFORNIA.

the live-oak thrives; and, Mr. Richardson having a good supply of large oak chunks, they were piled into the fireplace, and the fire roared up the chimney, giving us the very best of cheer.

Mr. Richardson came to California some twenty years ago, and may be termed an old-timer. The early portion of his life was passed in New England. At the age of sixteen he became possessed with that American trait, restlessness; and in order to fill the aching void in his nature he ran away from home and shipped on board a whaler. If his people had caught him on the run he would probably have found whaling enough for all present needs at home. He, however, spent three years on the ocean, and thinks that the hardening of his physical forces has been of benefit to him through all of these later years.



W. T. RICHARDSON, THE LEADING HONEY-PRODUCER IN SOUTHERN CALIFORNIA.

After leaving the whaler he turned his attention to a trade, and became an expert architect. I suppose that, owing to his love for the troubled seas, he embarked for life upon the matrimonial sea. I am assured, however, that the voyage has been one of calms instead of squalls (there are no children in the family).

While engaged in supplying the people of Ventura County with dwellings of the highest architectural skill and beauty he became interested in bee culture, and became ambitious to produce just as much honey as any other person. At the time of my visit Mr. Richardson owned about 1200 colonies. They are located in four apiaries in the Simi Valley. The home apiary is on his own ranch of something over 300 acres. He also has the exclusive right to the bee pasture on 12,000 acres of land, and that covers about all of the valuable pasture in the valley. The main source of honey is purple sage.

The next morning Mr. R. started out with his team to show me the beauties of a dry

country and a few of his apiaries. The first thing we encountered was a gate. The Simi gates are nearly all barbed-wire affairs of an apparently simple nature, but full of hidden surprises for the fingers and shins, and it requires an expert to handle them. I told Mr. R. that I was an expert in the gate line, and skipped out of the wagon, and won his highest commendation for my skill.

We soon found another gate, and another. Mr. R. would halt before each, and exclaim, "Here, Mr. Rambler, is another gate. I would open it, but do not wish to deprive you of the privilege, for I know you enjoy it."

I do not remember how many miles it was to the first apiary, but I do distinctly remember that it was six gates distant.

Mr. Richardson numbers his apiaries, and the one we now interview is No. 4. The apiaries are worked exclusively for extracted honey; and while for a greater portion of the year Mr. R. is attending to his architectural work he employs a reliable man to attend to the bees. Mr. Day Norris has been in the employ of Mr. R. for some time, and understands his business, and performs it to the entire satisfaction of the owner. In the early spring Mr. R. gets out occasionally for a day to make observations and suggestions; and unless an apiary is to be moved or extra work to be done, Mr. Norris attends to the equalizing, strengthening, and getting the bees in the best possible condition for the honey season.

With a full complement of extracting-combs this is not so arduous a job as might appear. When the extracting season opens, other men are employed; and instead of placing a man in each apiary, with exclusive charge, the men move from one apiary to the other in a crew; and, while there is an occasional swarm, there are not enough to pay to employ a man to remain in the apiary to watch them. The hive used in these apiaries is a little deeper and shorter than the L. hive. I think the frame is nearly 11 inches deep and 14 in length. Each apiary has its complement of tools and extracting-house, and there is no movement of implements from one apiary to the other.

I present in the accompanying photo one of the finest of Mr. Richardson's apiaries, containing 400 colonies, and located in the midst of hundreds of acres of purple sage. In the immediate foreground are stools of sage as it appears in the early spring, while the hill beyond is completely covered with it. There is comfort in this apiary from its being shaded with a few live-oaks. The parties shown in the foreground are Mr. Richardson and his trusted helper Mr. Norris. In our next I will give some further idea of the magnitude of Mr. Richardson's honey-yields.

#### BEE-KEEPING IN "MERRIE ENGLAND."

Apiary of S. Brooks.

Our illustration represents the modest little apiary of Mr. S. Brooks, who stands on the left in picture. Mr. Brooks has some substantial claim to be considered a teacher in

bee-craft, having had as pupils among others several of the nuns at Abbot Lea, Abbotskirkwell, and under his supervision these ladies are managing a successful apiary of their own.

We learn from Mr. Brooks that he has been a bee-keeper nearly twenty years, his first start being brought about by seeing some straw skeps at a farmhouse he had occasion to visit. Though only a boy of fifteen at the time, he bargained with the old dame who owned the skeps to pay her \$2.40 for a swarm which she said would be coming off in two or three days. Accordingly, he went—accompanied by a bee-keeper of more matured experience and years than himself—two days later, and was told on arrival that two swarms had come off, and he could take his choice. This he did, as that other boy did who said, "I

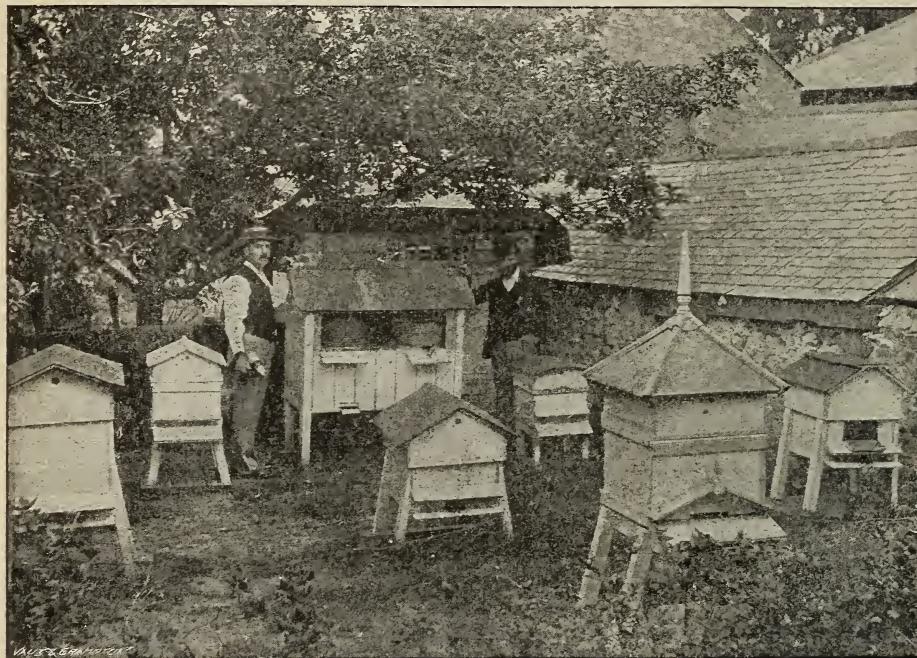
years I have to buy to keep my regular customers supplied." In concluding his remarks Mr. Brooks says, "I am a ropemaker by trade, and work with my father, so that, being on the spot, I am always at hand in case of swarms."—*British Bee Journal*.

#### A POINT IN QUEEN-REARING.

Will Bees, when Left to Themselves, Select such Larvæ as will Rear the Best Queens?

BY DR. C. C. MILLER.

In reply to a questioner, I favored the idea that, left to themselves, bees might rear as good queens as when they were restricted to



APIARY OF S. BROOKS.—FROM BRITISH BEE JOURNAL.

don't want to be greedy, so I'll take the heaviest."

From this small beginning he began the following year to make frame hives, after buying one as a pattern, and got a friend to teach him "the ways of modern bee-keeping." He then, in writing us particulars, goes on to say, "I have at present twelve hives, including skeps, which I keep for supplying swarms. The district around here is fairly good for honey, as we have plenty of orchards and fruit-trees about. My own crops are not very large compared with some whose bees are kept further out in the country. I average about 40 lbs. per colony yearly, and as an exhibitor at local shows I have taken several first prizes. Nor have I ever experienced any difficulty in selling my crop; in fact, in some

eggs or larvæ of a certain age. Referring to this, Hon. R. L. Taylor says in *Review*:

"He argues (*A. B. J.*, 295) that in a colony made queenless, with eggs and larvæ of all ages present, it looks rather reasonable that the bees will select what will make the best queens if it is left entirely to them. It may look reasonable that they should, but they don't; at least, they don't altogether; and the trouble is that, when they err, as they generally do, I suppose, from their eagerness to get a queen as soon as possible, by selecting one or more larvæ for the purpose that are too old to produce the best queens, the queens from such hatch first, and so the later and better ones are destroyed. The remedy is to remove the larvæ, in four or five days, from all but three or four of the most satisfactory cells."

So important is it to have the best queens possible, that the matter should be very seriously considered before following a plan that, in Mr. Taylor's judgment, would bring such bad results.

One might suppose that, if the bees have intelligence enough to select an older larva because it would give them an earlier queen, their intelligence might carry them a step farther, and make them willing to wait for a better queen. But it isn't always safe to trust the bees to do what might seem best to reasoning creatures. In some cases man's reason comes in to direct the bees. Mr. Taylor says when the matter is left to the choice of the bees "they don't" select what will make the best queens. In their hurry they select larvae too old. Scientists tell us that the food the worker larva gets for the first three days is the same as the royal larva gets throughout its entire existence, and that a larva three days from the egg is as good as the best to produce a queen. So the difference between a worker and a queen is made in the last two or three days of feeding before it is sealed up. But although the difference is made in that two or three days, it makes more than that length of time in the development, for the worker is five or six days longer in coming to maturity than the queen.

Now, suppose a queen is taken away from a colony, there being present eggs and brood in all stages. One set of bees say, "Here's a larva three days old; we'll rear a queen from that." Another set says, "Here's a larva two or three days older, just ready to be sealed over; let us rear a queen from this, and we shall have a queen two or three days sooner." Now, this latter larva, if it were continued as a worker, would not emerge from its cell until 21 days from the laying of the egg; and, changing from its original destination so late in life, it will be only an abortive sort of queen, taking nearly as long to develop as a worker; so it will turn out that the larva three days old will come out of its cell sooner than its older sister. In general, it may be said that any larva more than three days old in a worker-cell has had a change in its food unfitting it for a perfect queen, and lengthening the time of its maturing so much that any gain in the way of age will be more than counterbalanced by the longer time it remains in the cell after being sealed up. Considered in that light, it is not easy to see that it is not possible for any queen to emerge from its cell earlier than one from a larva three days old?

Keep in mind that the oldest larva that is unsealed in a worker-cell is only two or three days older than a three-day larva that will produce a perfect queen, and that, after the first three days of its existence as a larva, every day that it grows older before it is chosen for a queen makes more than a day's difference in the time it remains sealed up.

Let us look at the matter in a little different way. How long does it take from the laying of the egg to the emerging of the queen, under favorable conditions in a full colony? Forty years ago 17 to 18 days was considered

the right answer. On page 199 of the *American Bee Journal*, Vol. I., 1861, no less an authority than the baron of Berlepsch gives, as the result of very careful observation, that in one case the queen emerged in 18 days, and in a second case in 17 days. He then remarks, "These experiments show that the opinion generally entertained, that the queens emerge between the seventeenth and eighteenth day after the eggs are laid, is correct." But Berlepsch used a small forced swarm or nucleus, and it will hardly do to take that as a basis for what would happen in a full colony. At any rate, the time has been shortened since then, and most of the text-books now give 16 days. Cowan gives 15; and as he is a careful observer, and, withal, properly conservative, it is not likely he would so far depart from the traditions of the fathers without being very sure of his ground. So it is safe to say that 15 days is correct.

Another question: "When a queen is taken from a strong colony, the bees being left to their own devices as to raising a queen, how long is it from the removal of the queen to the emerging of the first young queen from her cell?" Perhaps something like 12 days is given, and I do not remember ever to have seen any record of the emerging of the young queen any sooner than the tenth day after the removal of the old queen. A somewhat large experience of my own confirms this view.

Now, suppose a queen emerges ten days after the colony is unqueened. How old was that queen, or, rather, that larva, when the bees began to treat it as a thing of royalty? Ten days taken from its entire inter-cell life of 15 days leaves 5 days as its age from the laying of the egg, or 2 days of age as a larva. Allowing that the bees did not discover their queenlessness immediately, there is still leeway enough to assure the selection of the larva before it was older than three days. When the young queen emerges 11 or 12 days after unqueening, then a still younger larva must have been chosen. On this point Berlepsch says on the page I have already quoted from, "I will only add, in passing, that the bees do not, as is commonly stated in the books, usually select a larva three days old, but in most cases a younger one."

I know it is a quite commonly accepted belief that bees left to themselves select larvae too old for the best queens; but it is high time to lay such beliefs aside. The truth is, they don't make such mis-choice; and if they did, such old larvae would emerge as queens later than their younger sisters. A larva chosen at the time of weaning, at three days old, will emerge a perfect queen at an earlier date than any other larva either older or younger.

So there is no need of any remedy such as Mr. Taylor proposes, "to remove the larvae, in four or five days, from all but three or four of the most satisfactory cells." Even if such remedy were necessary, how many are there who can tell which are the most satisfactory cells?

In the hands of experts, I believe queens as good as the best can be raised by confining the bees to eggs or larvae of a certain age,

but they will average no better queens than will be reared by the bees when they have brood of all ages from which to select. In the hands of the common honey-producer, the best queens will be reared by allowing the bees their own way, and then, when the cells have been sealed in a strong colony, letting the nucleus or colony in which the queen is to be kept till laying have several cells from which to select. I know that I have reared hundreds of good queens in that way, and there is less chance for miscarriage thereby than in any of the other ways that may be advisable for queen-rearing specialists.

Marengo, Ill.

[My own experience of several years ago, when I was doing the queen-rearing at the Home of the Honey-bees, and the experience of our Mr. Wardell, who is now doing that same work, would rather lead me to lean toward Mr. Taylor's position; namely, that, when a colony is made queenless of eggs and larvae of all ages, they do not as a rule "select what will make the best queens." I have sometimes thought that, when they find themselves suddenly deprived of their mother, they are in such haste to supply the deficiency that they start with any thing they can get; but, on the other hand, when they are about to supersede a queen there is no hurry; neither is there need of any haste during the swarming season, for they have in either case plenty of time, not only to do good selecting, but to do good work. Our recent experience shows that, in order to get good queens under any circumstances, a moderate honey-flow or moderate feeding is an important requisite.—ED.]

#### THE WORKER-BEE A PERFECT BEE.

The Dzierzon vs. the Dickel Theory, Regarding the Control of the Sex; Second Entrances; Cotton Batting for Calking Old Hives; a Simple Introducing-cage; a Novel Method of Introducing Queens by means of a Cage made of Foundation.

BY F. GREINER.

When reading the Aug. 1st issue of GLEANINGS, different things suggested themselves to my communicative mind; and while I think of them I will jot them down.

Dr. Miller, in Stray Straws, speaks of the worker-bee and the queen, the former as being generally considered a dwarfed or undeveloped female. As he further says, each is a perfect being of its kind, each made for a special purpose, and so they are beginning to be regarded by good authorities on bees, and by scientists in this and other lands. What is most remarkable in this matter of queen and worker-bee is the fact that the nurse-bees have it in their power, even at so late an hour as when the worker-bee larvae have already reached a very advanced stage of development, to still bring either a queen or a worker-bee to maturity. This in the face of the fact that the queen is minus some organs and faculties the worker-bees do possess. I reason it out like this: The worker and queen larvae are

perhaps exactly alike up to within two days of the end of their growing or larval period; that they act as a sort of storeroom for certain foods administered during the last two days, and to be assimilated or used during the pupa stage for the perfection of the insect, and that this further and final development in the cell after being sealed is in accordance with the kind, quality, and perhaps amount of food thus stored. Let us bear in mind what a power the worker-bee here exercises on the offspring. Some of our German scientific bee-keepers go still further. Although few doubts have been expressed for years as to the soundness of the Dzierzon theory, according to which the queen alone determines at will what her offspring shall be, male or female, yet of late this "Dzierzon theory" has been attacked by F. Dickel, present editor of the *Bienen Zeitung* (formerly edited by Vogel). The proof seems to be strong, I must admit; but after all I have grave doubts. Dickel seems to show that the eggs, as laid by a normally fertile queen, are indifferent as to sex. Or if that does not quite express it, the male and female rudimentary beginnings are both present in the egg, both equally strong, and it is owing solely to the influence of the worker-bee which one is to develop.

We have long been convinced that the workers are the leading power in the home affairs of the hive, and it may be that their will here is decisive also. When I get a little more leisure I will try to show just what the Dickel theory is.

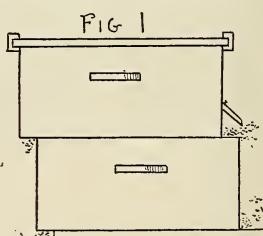
In another Straw, Dr. Miller speaks of giving ventilation and giving a second entrance when two brood-stories are being used. Why not give this second entrance by sliding the top story back far enough to suit one's ideas as to the amount of ventilation? By sliding the bottom story back over the floor-board, an entrance may be given there also. So we

have it in our power to provide as many as four entrances when using two brood-chambers, without interfering with the usual bee-spaces. If the top story is slid back, that, of course, would

allow the rain to beat in at the front, and a suitable provision will have to be made. A piece of pine lumber, beveled on one edge, and temporarily tacked on as shown in Fig. 1, answers the purpose. My little girls speak of our hives thus arranged as the hives with stoops for the bees.

Cotton batting for calking up old box hives serves a good purpose; but with well-made hives of modern construction none will be needed. I have just moved a few loads of bees into other pastures (buckwheat) without mishap, although the roads were in bad condition owing to heavy rains and washouts.

This season has been a remarkable one for storing pollen in the sections. Contraction



has done it in connection with the extremely light honey-flow. When the flowers yield abundantly in nectar, very little pollen is brought in — seldom more than is needed for immediate consumption. Contraction may then be carried to the extreme when section honey is the object.

Successful introduction of a queen : It may be an old thing, but it will bear repeating. Select a comb with brood just hatching; allow

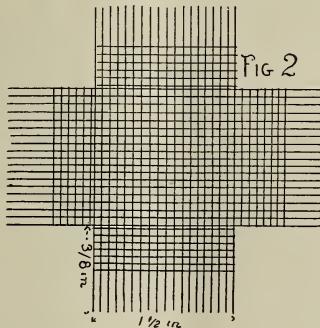


FIG. 2

the queen to pass from the cage on to this ; and when she is in the right place, where bees are hatching out most, confine her to this spot by means of a little shallow wire-cloth box like Fig. 3, the box to be about  $1\frac{1}{2}$  inches square, and simply made of a square piece of wire cloth as in Fig. 2. The raveled ends of the wire, when pushed into the comb, hold the cage in place. They may kill a few unhatched bees in their cells, but I find this method pretty safe to introduce even a valuable queen. It is not absolutely necessary that honey should be inclosed under the box. I have watched this carefully. The outside bees feed the hatching young as well as the queen till the cage is removed or the confined bees liberated by the bees outside.

Another novel way for introducing queens has been practiced successfully by our German friends across the water for a number of years. They make a cage of comb foundation by rolling a piece of the proper size around a finger. They then pinch one end shut, and make a few perforations with an awl or the point of a penknife. It is now ready to receive the queen; and after she has run in, the cage is closed by pinching it shut. Thus the caged queen is inserted between two combs. This method has the advantage that one will not have to look after the cage, as the bees will remove it themselves, after the queen is safely installed. Try it. *Probatum est!*

Queen-cells I seldom fasten otherwise than by pushing the butt-end into some portion of unoccupied soft comb. That seems to be sufficient.

Are bees partial to any particular color?

Well, I thought it was accepted as a fact that they do not take kindly to dark colors. I might mention here what has almost become proverbial, their sometimes getting mad enough to sting a stovepipe. Try this : Stand an opened smoker without fuel, or with the fuel burned down, on the top of a bee-hive in the bee-yard, especially at a time when the bees are inclined to be cross, and then see them dive into the dark abyss. I no longer wear a particularly fuzzy black hat or black pants when doing any kind of work among the bees. I should prefer clear white for a bee-suit, if it were not for its showing dirt more than dark. Some writers have made the claim that bees can not see or correctly locate any thing white, giving that as the reason why many bees fly right into the snow in the early spring, or at any other time when it is warm enough for them to fly and snow is present. I am not quite satisfied as to that. There is no guesswork about it, but we know they can well locate white blossoms. They also seem to regard my wife's white sheets and other clothes on the line as obstructions. I have never seen them bump their heads on them, as they very frequently do on my telephone wire.

Dr. Miller condemns the practice of adding resin to beeswax to make the mixture more adhesive when used to fasten comb foundation into frames, on the ground that we might thus adulterate our beeswax. Propolis used instead of resin answers pretty well the same purpose ; and since all of our old combs are more or less coated with this substance anyway, the objection to its use in the way indicated would not be as great.

Naples, N. Y.

[I have personally tried queen-cages made on the plan of Figs. 2 and 3, and know they usually if not invariably give good results. But such cages have been largely set aside because the majority of mailing-cages are also introducing-cages.

I have never tried introducing a fertile queen in a sort of artificial queen-cell made up of foundation; but I see no reason why it would not work. I hope to have our apiarist try it at his earliest opportunity.—ED.]

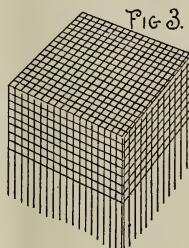


FIG. 3

#### THE SEASON IN CALIFORNIA.

The Low Price of Honey Notwithstanding its Scarcity.

BY W. A. PRVAL.

The year 1898 has become sufficiently a thing of the past, looking at it from a bee-keeper's standpoint, to justify speaking of it in the past tense. It is a year that will long be remembered by our fraternity in this State as one that was fraught with many discouraging features, the worst of which was a lack of sufficient rain to cause the honey-producing flora to yield nectar for the provisioning of the hive for "home consumption," to put it in that way ; at least, this was the case in the greater portion of the State where bees are

kept for profit. Then in some sections there was an entire absence of moisture, thereby preventing any growth whatever of vegetation. In these places the bee-men were in sore straits as to whether it was advisable to let their bees starve or to feed them, or move them to a place where they could find sufficient pasture to sustain them till the opening of a more propitious year. The latter places were to be found in the irrigated sections, along the rivers, and in the northern and some of the central portions of the State.

I heard of one bee-keeper in the southern counties (and I suppose he is not the only one) who believed that it was better and cheaper to let all colonies that were not able to sustain themselves through the term of scarcity starve rather than feed them. With him it was a case of "the survival of the fittest." This is not altogether good policy, especially since, if all the colonies were weak, the whole apiary would starve out and the bee-keeper would have no bees to begin a year of plenty with.

From what I have been able to learn there has been a medium crop of honey in the northern coast and mountain counties. Several months ago I saw in a commission house in San Francisco a fine consignment of delicious light-amber honey that came from an apiary in Monterey Co. I should think it was the first of this year's crop to reach that market. Even at that time, when it was well known that there was to be an almost entire failure of the honey crop in this State, I was told that dealers were offering a little less than five cents for this fine honey. Even then it did not move off with that rapidity one would expect such beautiful new honey to do. I should not wonder if it was the first of this year's crop that reached the San Francisco market. There must be something wrong with the honey-dealers in that city when they do not do more to keep the price of honey at a higher figure. Here was a good grade of honey selling at least a cent a pound less than it should, since there was to be no crop to speak of produced in this State this year. Even now I learn when, it may be said, as just after an election, all the returns are in, and it is clearly shown that there is a marked falling-off in the honey crop of the entire country, there is no upward tendency of the honey market, as one has reason to expect under the conditions mentioned.

Bee-keepers should hold their crop; they should not be too ready to accept the offer of the first dealer who presents himself. Wait until the output of the season is pretty well determined before negotiating for the disposal of the year's crop. If bee-keepers would do more to keep up the price of their product the industry would not be in such a poor condition to-day.

I did not work more than two-thirds of the colonies in my apiary this year. The yield per hive for those worked is 80 lbs. of extracted honey. The honey is mostly darker than usual, and of heavy body. I never saw honey granulate so soon as the product of the hives for this season. In about two weeks it would

commence to show signs of candying, and in a month it would be quite solid. I think one reason it did this is owing to the large amount of alfilarie nectar which the bees gathered. I never knew this plant to remain so long in bloom as it did the past season. I think it began to bloom about the middle of November, and continued to do so sparingly until February, when it came into full bloom and continued to do so till the middle of May, after which it gradually "slackened off." Some plants in moist situations are still putting forth their little flowers. From the way the bees worked on the flowers of this plant I should judge that it yielded nectar very freely this year. And this, no doubt, accounts for the rapid granulation of the honey I have mentioned. I learned that, in previous years, alfilarie honey soon candied, but never did I experience such rapid transformation of liquid honey into the granulated article.

#### AN EASY METHOD TO CURE BEE-PARALYSIS.

Some four years ago I noticed what I took to be the first case of this disease that ever came under my observation. It was not a very bad form. As I was afraid it might spread and affect other colonies in the apiary I called the attention of Prof. Woodward, of our State University, to the matter. He took some of the affected bees for diagnosis, but I never heard from him concerning them. This spring I saw that two colonies that had been suffering quite severely for some months previously were getting worse. I had never seen a case of what was known to be really "bee-paralysis," so called. I wrote to a well-known authority upon bees and their diseases, describing the malady that troubled said colonies, and received reply that they were, in all probability, afflicted with the well-known "wig-wagging" disease that heads this paragraph. He could not give any remedy that was known to be a positive cure. I had read somewhere that substituting new queens would cause the malady to disappear. I tried this, but it did not do any good. The bees of one of the colonies were dwindling away quite rapidly; bees by the hundred would crawl from the hive each morning, and go wig-wagging away from the hive as fast as their "unseaworthy" legs would carry them. At times there would be a quart of dead bees in front of this colony. The other one, which was some distance away, was nearly as bad. As a last resort I thought I would try a remedy casually mentioned the fore part of this year, either in GLEANINGS or in the *Am. Bee Journal*, I forgot which. The writer of the article in question asked if any one had tried exchanging locations with colonies afflicted with bee-paralysis. He had tried it, and found that it worked like a charm in banishing the disease. I waited, hoping to hear from some one else before giving it a trial. As no one seemed to give further experience in this direction I thought I would try it anyway. The result was magical. The change of places was made at a time when honey was coming in freely, and the bees did nothing to show that they disliked the strange bees that were necessarily mixed up in their respective hives. Where

the afflicted bees went to I do not know. One thing, there were no more dead bees in front of either hive.

To make myself more clear I will state that I exchanged an unwell colony for a well one, the latter being placed on the stand occupied by the former. It is now many months since this transformation took place in these colonies, and from that time to this not a single "wig-wagging" bee have I seen in the apiary. What caused this disease to disappear so rapidly under such an easy operation, where really nothing was done to change the former life and conditions of the bees, is something that puzzles me as much as the question, "What is bee-paralysis?" Can it be that it was caused by some electrical disturbance, the changing of location causing a change of current? Yet I do not see how it can be this, for would not the hive that took the place of the removed one be soon afflicted also?

#### THE WEE BEE-MOTH.

This little moth is becoming quite an annoyance in the apiaries in this part of the State. While it does not usually carry on its depredations within the hives as do the well-known large bee-moth, still any combs that are left exposed, especially those containing pollen, are soon preyed upon by this little fellow. They are not so easy to follow up and destroy as his more lusty companion in destruction. My observations regarding them during the past year show that they fly about during the day, thus differing from the common bee-moth. I saw a lot of combs, some of them nice new ones free from pollen, destroyed by this wee moth, and the big fellows could not have been more destructive.

North Temescal, Cal., Aug. 27.

[There may be no upward tendency in the honey market in California; but the scarcity of our product in the East has had a very perceptible effect on *our* market. Last year, comb honey averaged 9 and 10 cents; but now it runs more nearly 12 and 14 in a wholesale way. I was a little surprised at this myself; for in former years, when there has been a scarcity, there has been little if any stiffening of prices—at least not in proportion to what we might expect; but the very poor yield this season—the poorest that we have known in years—has had quite a decided effect.

Regarding the cure of bee-paralysis, I do not know but the plan outlined above is the most sensible of any thing that has yet been proposed; and if it is a fact that it accomplishes the result, it is high time we were trying the cure. I wish, therefore, that those of our friends who have bees afflicted with this peculiar disease would try this exchanging plan, and report.—ED.]

*J. R. P., Ala.*—It is evident from what you state in your letter that one of the colonies that swarmed out had no queen. As they failed to find her in the new hive, they went back to the parent hive. This is precisely what they would do if they lost the queen while in the air.



GRADING HONEY; DOOLITTLE'S POSITION AGAIN DEFINED; DOES NOT RECOMMEND OR PRACTICE FACING.

*Question.*—Have you read what is said under "The Grading of Honey," found on page 276 of *Review* for September? If so, will you tell the readers of *GLEANINGS* what you think of the ideas of friends Boardman, Koeppen, and Hutchinson in this matter? If we are to follow these "lights," and put all the "Fancy" and "No. 1" white honey together, how are we to do in the matter of "facing" the crates? Or, in other words, which shall we put next the glass in the crates—the fancy or the No. 1?

*Answer.*—I should have preferred that this query had not come up just at the present time, only such a little while after the editor had shut down on any thing further regarding the facing of honey; but as it is a *live* question, and comes just in a "*live*" time, I think the editor will let it go in, even did he think enough had been said on the "facing" matter only a little while ago. I notice that Bro. Boardman is quoted as saying that "we get no more for our fancy than we would for both fancy and No. 1 crated together." After the fancy is sold, No. 1 is hard to sell, and we must sell it at a low figure." And I wish to say that the experience of Bro. B. is just my experience, when both No. 1 and fancy are shipped to the same commission house. I have repeatedly said that no person can carry the difference "in the eye" between fancy and No. 1 honey ten rods, or even up a flight of stairs. What I mean by this is, let the best judge of comb honey look at No. 1 on the ground floor of a building, then go up a flight of stairs and look at a lot of fancy honey, and, upon close questioning, he will tell you that he sees very little difference in the two lots. Yea, more: Face one side of a crate with fancy honey, and the other side with No. 1 honey, and ask the ordinary man which of the two sides is the nicer, and you will see him step first from one side to the other, then back again, then to the first side again, then back once more, when he will tell you he sees very little difference. But you place a crate of fancy and a crate of No. 1 honey side by side, or one on top of the other, and any "novice" will tell you that the fancy looks the nicer. And why the No. 1 does not sell as well as the fancy, where both are shipped to one commission house, is because the commission man sees the two side by side, and forms the opinion that No. 1 is not as good as the fancy, and so, after the fancy is all sold, he tells his customers he has been selling fancy honey at 15 cents, but he has some on hand that is not quite as good, and he will take 13 for it. When he admits that "not quite as good" he gives the purchaser a "leverage," and the purchaser uses it too, so

offers him 11 or 12 cents for it, and gets it at his own figures, as a rule.

Now, after years of experience I have learned better than to ship both fancy and No. 1 to the same man, so I ship the first to one party and the second to another; and the truth of the matter is, the No. 1 more often sells for the higher figure than does the fancy, though it more often happens that both sell for the same figure.

I am a little surprised at the admission of Bro. Hutchinson that "I have never practiced these Washington rules for grading," for I supposed the publishers quoting honey that way used these same rules when grading what honey they produce. I practice those rules of grading, but use X's as the better terms, instead of "Fancy," "No. 1," "No. 2," etc. For that which would go in the fancy grade, I use XXX; for the No. 1, I use XX, and for lower grades of white honey I use X. And the same grading is used on all dark or buckwheat honey. As I have before stated, these X's are conveniently placed in the handholes of the crates, and so, when getting the honey ready to ship off, it is easily sorted without comparing "faces," should it sit where face comparison is not easily done.

Regarding the last question asked by our correspondent, I hardly know what to say. I did not suppose any one put up honey by putting both No. 1 and fancy in the same crate. And I should like to shift this question off for Bros. Hutchinson, Koeppen, and Boardman to answer. Will they please tell us how they do?

In a late number of the *Southland Queen* the editor asks all who put the poorest-looking sections next the glass, when crating honey, to "hold up hands." But as I have seen no hands up I must take it for granted that these parties put the fancy on the outside and the No. 1 in the middle; and if so, and they send out such cases of honey as "Fancy" honey, Bros. York, Hasty, and Dr. Miller will have to whet their swords again for a new battle, after trying to slay Doolittle, when he neither did nor even recommended such a thing. Just what I do do, and just what I recommend, is an honest sorting of honey by the X plan as given above, then pick the "prettiest faces" out of each lot and place them on the outside. I never allow a single section of XX honey to go into a XXX crate, much less an X section, unless it is the last two or three cases in finishing up the season's work, when "odds and ends" are put together and marked M, which means "a mixed lot." Were I to put No. 1 and fancy together, the only honest way, as I should consider it, to crate such honey would be to face one side of the crate with fancy honey, and the other side with No. 1. And I will guarantee that nine purchasers out of ten would not know which side was fancy and which side was No. 1 were they given only just one crate at a time to look at. But did they have two to look at, and the No. 1 side of one case and the fancy side of the other were placed toward him, he would choose the fancy case every time. Then when he took it home, opened it, and set out

the fancy and No. 1 side by side, he would think he had been "cheated," but not till he did this. But he would be cheated only as to looks, as the number one would be just as well flavored. Will Messrs. H.'s, K.'s, and B.'s conscience allow of even looks cheating?



#### FOREIGN MATTER IN HONEY-COMB.

I send you with this a piece of newly made comb—the roughest and altogether the worst-looking comb I ever saw, made when I had reason to expect the very nicest white comb if any. There is no honey coming in now. Our fall flow commences about the 15th or 20th of August. The colony that made this comb is in an eight-frame hive, and is on scales. I have been feeding them granulated sugar and water for a little more than a week for two reasons: First, I wanted to know how the increase in weight compared with the amount fed. Second, I wished to test the Boardman idea a little. So far I have fed 18 lbs. of sugar—equal, perhaps, to 25 lbs. of syrup as thick as honey. The gain in weight is 16 lbs. I have fed in a division-board feeder, put in a second hive-body, nearly filling up with dummies, and a piece of partly wool carpet over the feeder and dummies—flat cover over all.

A day or two ago I found they had gnawed a hole through the carpet, and had commenced building comb. I at once took the comb from them and put in another division-board so they could build no more. If you examine the comb with the aid of a glass you will see that the bees have utilized the wool from the carpet, in forming cells, something as a bird uses similar material in building her nest.

O. S. REXFORD.

Winsted, Ct., Aug. 8, 1898.

[The sample of comb was received, and is quite remarkable. The bases as well as the walls are very thick and heavy—almost  $\frac{1}{8}$  of an inch thick instead of being the regulation thickness,  $\frac{3}{100}$ ; and, as Mr. Rexford well says, there is burlap scattered all the way through the comb. Bees have been known to do this before, but I never saw a sample where they seemed to throw in so much foreign matter.

It appears from the tests above given, that, in feeding sugar syrup, considerable of it was lost somewhere, probably in brood-rearing, besides what the bees actually consumed.—ED.]

#### MOVING BEES IN SACKS OF BURLAP.

In Straw No. 7, Aug. 1, you have a footnote in regard to using cotton batting for calking purposes when moving bees, in which you say, "This is a kink worth knowing. Paste it in your hat." That is all right, but I can show you a trick worth two of it. If you have old hives full of holes, plug them up

with batting or old rags. Ventilate them so they will not smother, then get some burlap and make a sack which will hold the hive nicely, and, after fastening the top and bottom boards on tightly, put the hive into the sack and sew it up as you would a sack of barley or wheat, and you can drive over rough or rocky roads, or any kind, and not a bee can get out to bother man or beast. I have moved hundreds of them in this way without accident of any kind.

I thought every one knew that bees dislike dark colors. If any one doubts this, let him, after extracting in light clothing for a few days, until the bees get thoroughly roiled up, go out among them dressed in black. If he is not convinced I will treat to the doughnuts.

Los Alamos, Cal. JOEL HILTON.

[To put every hive in a sack strikes me as being a good deal of labor. I'd prefer to have a few bees get out than to go to so much trouble.—ED.]

#### DR. MILLER'S GLOSSOMETER.

I couldn't resist the temptation to stop writing Straws long enough to give you my conception of a simple glossometer. I don't know whether it's original or not. A box 12 inches long or longer (important to have it as long as possible), 2 inches wide, 1 inch deep. An inside bottom, *a*, *b*, inclining at the proper angle, and a covering of something like wire

#### ANOTHER ACCOUNT OF THE BAD WORK FOUL BROOD IS DOING IN NORTHEASTERN NEW YORK.

We have just returned from a visit to the various bee-keepers throughout Albany and Schoharie Counties, and we must say they are a splendid lot of fellows, and did every thing to make our visit pleasant. All of them wanted us to look over their stock of bees; but, not expecting to embark in the business, we declined, and came home without a sting.

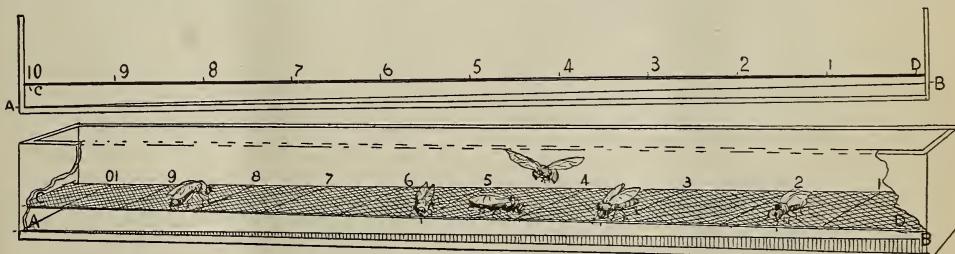
Foul brood, as they call it, has made its appearance in many yards in certain localities, and fears are entertained that it will spread throughout these entire counties, notwithstanding that nearly all hives affected with it have been destroyed by burning up bees, brood, and honey. Some producers, losing their entire stock, have had to retire from the business. We came across one man who had lost all but two colonies, and these two have produced him over 400 pounds of honey. The loss of the others seems to have given these two a better opportunity to gather honey.

The crop of buckwheat comb and extracted will be quite large, but clover is a short crop. The quality is fine.

CHAS. McCULLOCH.  
Schenectady, N. Y., Sept. 15.

#### DEEP ENTRANCES AND SHADE-TREES.

I have just read GLEANINGS for Aug. 15, and note what Mr. Doolittle says about deep



cloth, *c*, *d*. That's the whole story. Not quite, for across the bottom must be lines regularly placed, measuring it off. At *d* the depth is such that any common plug of a bee can reach the feed and lower it to 1. One with a little longer tongue can lower it to 2. No bee in the apiary can lower it to more than 5 or 6, and it is left for future generations to get it down to 10. The Frenchmen say there's quite a variation in the length of bees' tongues in the same apiary. Level a hive perfectly, put the thing into an empty super, cover up, and, after the bees have had time to lower it, make your entry. For company, one could be made with a glass cover so you could see 'em stretch their tongues. C. C. MILLER.

Marengo, Ill.

[I am very sorry, doctor, but somehow I have not the ambition or enthusiasm to make any thing of this kind; but if you will go ahead and have it tested I will give you all the space in GLEANINGS you want, to tell about it. The glossometer is your hobby—yes, your baby.—ED.]

entrances doing away with bees clustering out. I had 24 colonies in eight-frame L. hives this season, and had 8 swarms issue, which I hived in new Dovetail hives, eight-frame, with Hoffman self-spacing brood-frames. I raised the rear end of these hives about  $\frac{1}{2}$ -inch, or enough to give pitch so water would run out if driven in by heavy storms, then I raised the front of hive (not bottom-board)  $\frac{1}{4}$  inch which gave me an entrance  $\frac{5}{8}$ -inch deep. The bees in the deep-entrance hives did not cluster out as did those with a shallow entrance, but they did cluster under the brood-frames, and did not seem to work as they do in cooler weather. The question in my mind is this: Was the entrance deep enough, or is the weather sometimes too warm for bees to work actively? or was the inactivity caused by a light honey-flow, and those bees I noticed seemingly doing nothing, house-bees who had no honey to do with? These questions, it seems to me, are all of importance, as the more the bee-keeper can control surrounding conditions to induce greater ac-

tivity, the more the surplus honey; and, really, does it not all rest with the bee-keeper by placing supers on hives just the moment honey begins to come in in earnest, and then giving a second and even a third super at the right time, also giving, as nearly as possible, the proper temperature by deep or shallow entrance as occasion demands? This season has been so cool for this locality I can not say I like shade-trees for bees, for I am convinced my bees would have done better this year (especially by building up faster in spring) had they been more in the sun; but in a warm summer I should prefer them in the shade.

Millard, Wis.

W. T. SHERMAN.

[Last season, in most localities, was too poor to prove very much either way; but in talking with Miss Emma Wilson, Dr. Miller's sister-in-law, she stated that the bees clustered out more with narrow entrances than with wide ones; that they contracted at one time the entrances to part of their colonies, and the result was that the bees began to cluster out in front of those colonies.

It is true that bees will hang on the frames where a deep entrance is used, to some extent; but whenever they are in front of the hive they obstruct the entrance, and interfere with the proper ripening of the honey. At various times at Dr. Miller's, Vernon Burt's, and at our own yards I have watched these wide entrances, and, as a general rule, I have found that bees coming in from the field take a nice easy gentle curve, go through the entrance on the wing, and alight on the bees hanging below. A honey-laden bee dislikes to land on a hard board; and it will invariably, if given the opportunity, alight on a cushion of bees. So far as this is concerned it would not argue for wide or narrow entrances, any more than that, in the case of the former, the field-bee *saves time* by getting to the bottom of the cluster itself, with one quick easy upward swoop without being obliged to crawl through a small entrance obstructed by bees, and then *crawl* several inches on the bottom-board.—ED.]

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#### BEE-SPACE IN COMB-HONEY CASES $\frac{3}{16}$ AND NOT $\frac{1}{4}$ INCH, EVEN WITH ITALIANS.

I have just concluded reading A. E. Coonrod's article on page 622 and your comments on same, in which he says that he "found the bee-space used by large colonies in the height of the honey season to be scant  $\frac{3}{16}$  inch, and by the smaller colonies to be a little over  $\frac{3}{16}$ , or about  $\frac{7}{16}$  inch; but on the average they are  $\frac{1}{8}$ ." His bees are pure blacks.

Now you can just put it down as substantially correct that the above measurements apply to pure Italians as well as to blacks. I made very careful and accurate measurements 12 years ago. I had then a very fine crop of white-clover honey, produced, of course, in bee-way sections, between wooden separators, by pure Italian bees. My reasons for measuring was that I carried myself with the idea of constructing an improved section case. My method was to take a small stick of pine wood about  $\frac{3}{8}$  inch square, and whittle one side of

it down, little by little, until I could just pass it down between the separator and cappings. I whittled several sticks, and measured spaces in quite a number of cases, and the result of the measure was always  $\frac{3}{16}$  of an inch for well-crowded cases, and a little more where the bees had more room.

If your measurements gave a space of  $\frac{1}{4}$  inch, I surmise that the bees had either too much room or the honey-flow was not heavy enough to let the bees use all available space. At any rate, I do not believe it was because you used Italians.

Of course, there will always be sections the bee-space of which will be nearer  $\frac{1}{4}$  than  $\frac{3}{16}$  inch. The last case which the bees finish off as the honey-flow becomes slower and slower, and finally ceases, will contain such; but the only true measurement can be taken from sections which have been filled under the most favorable conditions, have been crowded full, and you will find, I think, that, no matter where produced, or whether produced by Italians, hybrids, or blacks, the average bee-space is  $\frac{3}{16}$  of an inch.

T. H. KLOER.  
Terre Haute, Ind., Aug. 19.

[I am a little surprised at your figures. We have had, I think, scores of reports showing that the production of comb honey in plain sections has in almost every case been attended with most gratifying results. We assumed last season, when we gauged the thickness of the cleats on the fences, that the average bee-space was  $\frac{1}{2}$  inch. We therefore made our cleats  $\frac{1}{2}$  thick, or two-thirds as thick as the bee-space. This would leave  $\frac{1}{2}$  inch depression in the face of the comb, from a line or straight edge across the edges of the section. Now, then, if  $\frac{3}{16}$  inch were the correct bee-space, with both Italians and blacks, the surface of the comb would come very nearly flush with the edges of the sections. Reducing  $\frac{3}{16}$  and  $\frac{1}{2}$  to a decimal the figures would stand .187 and .166 respectively. This would bring the face of the comb to within .029 of the straight edge. Now, then, if the bee-space in some cases were less than  $\frac{3}{16}$  the comb would come even with the edge of the section, and thus be entirely uncratable. We know of one or two cases where the fence did not seem to accomplish the result desired; but we have, since then, ascertained that the trouble was because the fence in question was not properly constructed.

I have been over dozens of different lots of honey produced in as many different localities; and with scarcely an exception the bee-space seems to favor  $\frac{1}{4}$  inch. Your own measurement, in your own locality, would hardly be a correct basis for average localities throughout the United States.

But this is a very important matter, and we earnestly desire reports from bee-keepers everywhere; for upon its correct solution will rest the matter of the thickness of the cross-cleats on fences. If  $\frac{3}{16}$  is the correct bee-space, then the cleats on the fence would have to be thinner, of course, than  $\frac{1}{2}$ . See? As manufacturers of bee-keepers' supplies we should regard it a as favor if our readers

help us in gathering statistics on this very important matter.—ED.]

#### REPORTS ON PLAIN SECTIONS.

*Mr. Francis Danzenbaker, Washington, D. C.:*

On p. 630 of GLEANINGS, Aug. 15, you ask for reports on plain sections. I used 10 hives with plain Danzy sections,  $4 \frac{1}{2} \times 5 \times 1 \frac{1}{2}$ , and 20 hives with old-style Danzy, open top and bottom. In five of the first mentioned, triangular starters were used; in the other five, full sheets of foundation. Only starters were used in the 20 hives with old-style Danzy sections. The season here has been fair, the 30 colonies averaging about 50 lbs. to the colony, the largest yield from one colony being 128 complete sections, 32 of which were plain, and 96 old-style Danzy; the smallest from one colony, 17 lbs., old-style Danzy sections. The results from the ten hives, so far as the finished product is concerned, is about the same. I put sections together (as they came off the hives) that had starters and full sheets, and could see no difference; but when I ate the honey I preferred those with starters only.

I found one very important thing—the outside rows of these plain sections were as well filled and capped as those in the middle, while this was not so with the others in any instance.

Another item in favor of the plain: There was less propolis. In fact, in a majority of the cases I put them right into the shipping-crates without any scraping at all. I have had no trouble with bulged combs. They were all filled out nicely to the edge, and crated up all right in cases, with or without separators. By the way, I think separators a great improvement, and I shall use them in all my cases another season.

I used some old-style  $4 \frac{1}{4} \times 4 \frac{1}{4}$  sections this season, but obtained very little honey from them. I am satisfied that the ten-frame Dove-tail hives and Danzy sections, plain, and open top and bottom, have increased my comb honey 50 per cent or more. I did not test any of your Ideal sections this season; but from my experience with the plain Danzy sections, I am sure they are superior to the old style.

I shall use plain sections and fence on a majority of my hives another season, but in the Danzy supers. I have never seen any thing else in the way of a super that I like as well as the Danzy. I have had but little experience with the Danzy body.

Those twelve-framers you made for me three years ago are all right. I have used six of them double story, 24 frames, for extracting. Only one has swarmed in three years. The average per hive this season was 135 lbs. We have now a fine prospect for a heavy fall flow.

Bristol, Tenn., Aug. 22. M. D. ANDES.

#### PLAIN SECTIONS VERY SATISFACTORY.

*Mr. Editor:*—I will give you the result of the season's experience with the fence separator. I have used them with plain sections, also with the ordinary seven-to-foot sections. Used with the plain sections the results were very satisfactory indeed. Sections were filled better and quicker than with the plain sep-

arator, and look more neat and tasty. Used with the seven-to-foot, results were still better. I placed the section in such a way that the plain edges would be at top and bottom, and the insets at the sides, thus allowing free communication in every direction. I found that, when arranged in this way, the bees worked nearly as well, and stored honey almost as rapidly as they did in the extracting-supers. In fact, colonies in which sections were arranged in supers, as per the preceding, stored from 24 to 50 pounds more comb honey than did those in which the ordinary arrangement was preserved.

I think making the fences in such a way as to exclude the queen from the super would be an excellent improvement. S. A. CRAIG.

Battle Creek, Mich., Sept. 16.

#### PLAIN SECTIONS AND FENCES A SUCCESS.

The hives with the plain sections and fences and plain section-holders are "simply immense." I got 360 well-filled plain sections of honey,  $4 \frac{1}{4} \times 4 \frac{1}{4} \times 1 \frac{1}{2}$ , from the six hives, not spring count. All new swarms. The S. fences with the old slotted section-holder, the sections I used with the S. fences, are not filled out quite so full; but they are as full as the bee-way sections without separators I used on them last year. I have tried both eight and ten frame hives, but the eight-frame is the size for this locality. The section-holder is all right for me. EDWARD WILSON.

Whittemore, Mich.

#### HONEY IN PLAIN SECTIONS A GOOD SELLER.

I must say I had occasion to feel grateful yesterday, as I was peddling my first crop of honey, that I had learned so much about the business from GLEANINGS. I started from home about three o'clock P. M. with 68 lbs., 20 of which was  $4 \times 5$  plain, which I got of you, and was as nice honey as I ever saw. I got 14 cents for it. Well, when I returned at evening I had \$7.69 for my trip. I might say that one case of 24 sections was my poorest, and I got 10 cts. for it. I took 48 lbs. from each of three colonies. I had but 5 in spring, and had two swarms. N. O. JARVIS.

Kenwood, N. Y., Aug. 8.

#### PLAIN SECTIONS ALL RIGHT, BUT SHORT IN WEIGHT.

We are getting the best crop of honey in quality and quantity that we have had for several years. The  $4 \frac{1}{4} \times 4 \frac{1}{4} \times 1 \frac{1}{2}$  plain sections do not hold out in weight; they run about 14 ounces, where the  $3 \frac{1}{2} \times 5$  do a little better—about 15 'ounces. Otherwise I am well pleased with the plain sections. It takes 16 ounces for a pound here in Aroostook. Caribou, Maine, Aug. 8. L. E. TUTTLE.

#### HONEY-THIEVES: BRINGING THEM TO JUSTICE.

I had some of my honey stolen last winter. Three hives were destroyed Dec. 4th; but I set the deputy sheriff at it, and he got track of it by the wires that were in the honey. We procured a search-warrant and sifted the ash-

es, and found wires where the brood-frames had been burned. The thieves pleaded guilty, and were sent to the workhouse for 90 days—a light sentence, but all the justice said he had power to give. BENJ. PASSAGE.

Stark, Mich.

#### THE FARMER BEE-KEEPER AND HIGH PRICES.

It is not the farmer bee-keepers who cut the price here, but it is the big honey-men who ship honey to our large cities, and then our grocer will coolly tell us he can get honey for 12 or 15 cents a box. If selling honey for a high price entitles one to have his picture in the bee-journals, then surely we would "take the cake," for we retail at 20 and wholesale at 16 $\frac{2}{3}$ . But we don't want our picture put there. J. T. SHEDD.

New Braintree, Mass., July 21.

#### SEALING JELLY-GLASSES.

In putting covers on jelly-glasses last year, some of which did not fit perfectly tight, we dipped a small brush in melted beeswax, waxed the edge of the glass, and put the cover on at once. This makes it perfectly airtight. I do not know whether this is generally known. J. W. BANNEHR.

Braidentown, Fla.

## REPORTS ✕ ✕ ✕ ✖ DISCOURAGING

#### POOREST HONEY SEASON.

This has been one of the poorest honey seasons ever known in Butler Co. Bees made some section honey the first part of the season, but it was of such a quality that it was not fit to eat. Bees are busy now on buckwheat, which seems to be full of honey, but it will keep them busy to fill up below for winter. The supplies I bought of you are all right every way, and give my customers the best of satisfaction. I shall buy all my supplies of you another season. J. A. McGOWAN.

Prospect, Pa., Aug. 26.

Honey season closed a month or more ago. Crop very light in quantity; very dark in color, and poor in quality in this section. Bees are rather short of stores, but we have always had a sufficient flow from fall flowers, asters, etc., to give supplies for winter, and hope for the same this season. Last year 8 colonies, spring count, gave 400 lbs. comb honey; 50 extracted; this season, 9 colonies, spring count, in good condition, about 50 lbs. comb. H. P. JOSLIN.

Ben Avon, Pa., Aug. 25.

I have 78 hives of bees, but I shall not harvest 300 lbs. of comb honey. It is the worst year in ten. The failure is widespread in this section this year. R. A. WHITFIELD.

Westville, Miss., Sept. 2.



#### A GOOD HONEY-FLOW IN FLORIDA.

Following my annual custom for many years past, I herewith send an approximate report of the honey crop of this section of Florida. I had been counting our crop as a rather poor one until I saw Query No. 81 in the *Am. Bee Journal*, and from the replies to it learned that I have secured over 2 $\frac{2}{3}$  times the average for the past 25 years, of the 21 reporters from all over the country who replied as to extractable honey. Leaving out one report from California, one from Canada, and one from Florida, it is almost exactly three times the average; so I have concluded to be satisfied, even if my crop of 148 lbs., with plenty left in the hive for winter, does look small beside one of 353 lbs., and individual yields of 550 to 600 lbs. still fresh in my memory. Nor do I forget that last season showed the one total failure that I have ever known here.

The season opened up with bees in poor condition, as a rule, and some feeding had to be done to prevent starvation. I fed about 1000 lbs. of honey to stimulate the queens and ward off famine in the hives. Outside of mangrove, which is but slowly recovering from the effects of the great freezes of three years ago, and for the second time in my experience gave almost no honey in the bloom that it did have, the honey prospects seemed good. A little later we began to suffer from the most severe drouth I have ever known here, and the woods were burned over until it seemed as though nothing but cabbage-palmetto (like mangrove, not subject to injury by fire, drouth, or flood) could be looked to for a crop. The amount of the saw-palmetto crop was, therefore, a happy surprise to us, and the cabbage-palmetto gave its average yield. The extreme dryness of the air all the season has caused our honey to be of extra heavy body and fine quality. It was never better. The general average in this vicinity is a little below my own, and the number of colonies kept is greatly reduced since the freezes and foul brood hit us, so the aggregate is far below what it used to be during the decade ending with 1894. The promise for a fall crop of surplus is unusually good at this time. Foul brood has been thoroughly stamped out, so with a few favorable seasons we may hope soon to get back to our old figures again. Some of the bee-keepers are holding their crop for higher prices, expected later in the season, but are filling the orders that come to them from northern apiarists, at present rates.

Hawks Park, Fla., Sept. 3. W. S. HART.

T. J. C., Ill.—The best way to exterminate weeds or grass is to apply a sprinkling of salt around the place where you wish it killed out. It does not usually pay to try to kill out the grass and weeds except in front of the entrance to the hives.



## HAND-HOLES OR CLEATS.

WHILE at Dr. Miller's last week I could not help noting how much easier it was to lift hives having cleats for handles than those having hand-holes only. Dr. Miller has been a strong advocate of cleats; and after trying the two forms—the cleats and hand-holes—I am afraid I shall have to acknowledge that the former is better, although I have always talked the other way, because the hand-hole looked neater, and did not stick out in the way. I do not know, but I think we can devise a combination of cleat and hand-hole that will be both neat in appearance, and yet give a good firm grip on the hive. We are at work on different models now.

## BROKEN COMB HONEY IN TUMBLERS.

DURING one of the discussions at Omaha, the practice of putting up broken comb honey in tumblers by bee-keepers was most severely condemned, for the reason that glucose-mixers put a little chunk of comb honey into a tumbler of glucose, and then labeled it "Pure Honey." This latter, going out into the markets, disgusted consumers, and they naturally think that, if honey tastes that way, they want no more of it. It was urged that some good bee-keepers practiced putting up broken comb honey in tumblers. But that made no difference. They should be severely scored by the bee-keepers. They could put up their broken comb honey in tin pails; but even then it was urged that they sell it around home. I think myself that no bee-keeper should put up his broken comb honey in tumblers, for the very reason that such a package is at once suggestive of glucose.

## APICULTURAL EXHIBITS AT THE OMAHA EXPOSITION.

THE apicultural display at Omaha was the largest and finest of any thing that had heretofore been given anywhere, not even excepting the World's Fair. The building itself, 75x138, devoted exclusively to apiculture, was hardly adequately represented by the illustration that I gave on page 628. If there was any industry that received proper recognition at Omaha, in proportion to its size, it was that of apiculture; and I have no doubt the credit for all this is due largely to the untiring efforts of Messrs. Abbott, Stilson, and Whitcomb—especially the latter. These men are born fighters; and when they ask for something they ask for large things. It seems they were turned down the first time or two, but the requests were pressed, almost to the nature of a demand, and finally our friends were rewarded.

The supply manufacturers' displays were all good, and the general arrangement of the honey exhibits excellent. In marked con-

trast with the exhibits at the World's Fair, there was a pleasing variety. It will be remembered that, at the Chicago apicultural show, every thing was confined to show-cases of a certain size prescribed by the exhibition managers. This had the effect of giving a sameness to all the displays of honey. I hope in our next issue to show you half-tones of one or two of the exhibits.

## WHY HONEY DISAGREES WITH SOME PEOPLE.

AT the Omaha convention, a great deal of discussion grew out of the fact that honey makes some people sick. Some thought it due to the presence of bee-sting poison. Instances were cited to show that honey from bee-trees made the bee-hunter sick, because, it was argued, the bees, being angered, spill their poison over the face of the honey, and therefore render it unfit to eat. But the majority of the convention dissented from this view, taking the ground that a large amount of honey, such as a hungry bee-hunter is apt to indulge in, is likely to make him sick, especially if he is not used to eating honey. Our systems become accustomed to certain foods; and a certain large dose of any strange food is liable to cause trouble. Those who use honey largely, experience no ill effect, but, on the contrary, a decided benefit.

## HONEY FROM CALIFORNIA TAINTED WITH FOUL BROOD.

A PROMINENT bee-keeper in California writes, "Be careful as to whom you buy honey from. Much honey from foul-broody apiaries is sold, and consumers are careless by exposing drips from cans and sections, only to spread the disease. *I know this from observation.*"

It might seem to some, perhaps, and especially to Californians, that such a fact should not be published in a bee-journal, as it might have a tendency to hurt the sale of California honey. As nearly all the buyers are commission men or honey-dealers who do not take or read bee-journals, I don't see that it will do any harm. But bee-keepers do buy from each other; and this warning may be just timely enough to prevent the spread of that fearful disease in some localities that are now entirely free, even in California. In the mean time the bee-keepers of that State should, in conventions, see what can be done against such inexcusable carelessness; and if there is no law to prevent such work, let there be one enacted as soon as possible. We might as well face the fact that foul brood is spreading in certain localities in the United States. Concealing it would do vastly more harm than good. However, if GLEANINGS is wrong in this position it will cheerfully retract.

## QUALITY OF SWEET-CLOVER HONEY.

At one of the earlier sessions of the Omaha convention quite a discussion arose over the quality of sweet-clover honey. Some thought it rank and unpleasant; others, especially those in the vicinity where it is produced, pronounced it the finest honey in the world.

It seemed almost impossible to reconcile these differences of opinion until the fact leaked out that sweet-clover honey must be thoroughly ripened before its delightful flavor would be brought out; that green sweet-clover honey has a sort of bitter taste, which disappears upon thorough ripening, as just stated. The honey that Mr. York, editor of the *American Bee Journal*, produced, has been pronounced as being of very fine quality, and he was of the opinion that it was largely sweet-clover. When I first tasted some of his honey a couple of years ago, I remember I thought it had the most delightful flavor of any thing I had ever tried; but at that time neither Mr. York nor myself knew its source; but on my last visit he was quite certain that it was from sweet clover. That same delightful minty taste was present. At the convention some thought that sweet-clover honey was a little better when mixed with something else. Perhaps this is true, for Mr. York's honey, besides the sweet clover, has evidently a mixture of other flora that abounds in his vicinity at Englewood.

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#### DR. MILLER'S SALT-PETER RAGS FOR LIGHTING SMOKERS.

WHILE visiting at Dr. Miller's I saw him pull out a piece of rag from his tool-basket, light it with a match, or apparently attempt to light it, and put it down the smoker. There was no flame, and it seemed the rag had gone out.

"Here, that's gone out!" I exclaimed.

"Oh! that's all right," replied the doctor; "it will go;" and then he proceeded to cram in some planer shavings.

"You will put it out now, I am sure," said I.

"I think not," he replied; and at this he began working the bellows, when it immediately began to send out quite a volume of smoke.

"The rags in our locality do not burn that way," I remarked.

"Perhaps not," returned the doctor; "but we dip ours in saltpeter water, and then dry them. See? Just the moment the flame of a match touches the rag it will catch fire, and stay lighted."

Dr. Miller formerly soaked his rotten wood in saltpeter water, and then after it was dry used it for lighting his smoker. But the rag lights instantly, and is then pushed into the smoker. No crammug-in of other fuel will put it out. This saves much annoyance in lighting the smoker.

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#### THE CRITIC CRITICISED.

IT has seemed to me that the critic of the *Review* has rather departed from the legitimate field of work assigned to him by the editor of that paper. I was under the impression that he was to criticise the theories and practices of bee-keepers in the line of their favorite pursuit; but a large part of his criticisms have been devoted, not to the supposed fallacies and fads in apiculture, but to the literary infelicities in the writings of Dr. Miller, Editor York, and myself. Indeed, we three have

been almost the only ones who have claimed the critic's attention.

I have tried to console myself with the thought that I was in good company, or that *our* writings were more important than the writings of those ignored; but the critic somewhat upsets this by saying that, when he goes blackberrying, he picks where the berries are thickest.

Mr. Taylor generously admits that he lives in a glass house, and that "even Homer nods, and that Addison himself, a noted pattern in style, makes many slips." He enters a strong plea for pure, perfect language, and concludes by saying, "Beautiful typography is a treat: pure choice language is a feast." To all of this I give my most hearty assent; but "pure, choice language," however much it may be admired, is not a gift possessed by all, and I fear not by my poor self. I am not editing a literary journal, but just a bee-paper that strives to give ideas about bees, in plain English, without embellishment. I know I have made some "slips," and am always thankful to have my attention called to them. I appreciate it more if they are pointed out privately, and I believe I am profited quite as much.

But Mr. Taylor seems to be very thankful for the public mention of two grammatical errors of his, and adds that "helpful criticism is more than meat and drink" to him. While I think such things have no place in a bee-journal I can not refrain from referring to two more since he thrives on that sort of diet.

In the very article where he speaks so feelingly of "pure, choice language" being a "feast," he says, "I would be pleased" for "I should be pleased," and uses a superlative form of adverb\* for the comparative in referring to two classes of colonies. I have not had time to examine critically his other articles for "slips," but "W. P.," our proof-reader, says there are a few "nods" in these also.

I do not know what dictionary Mr. Taylor takes as his authority; but if he had used Webster's International or Funk & Wagnalls' Standard, authorities recognized by scholars everywhere, he would not question the use of the word "boil" as a noun in the phrase "bring it to a boil," nor would the crimson fluid from his sympathetic heart have suffused his cheeks when he says, "I am afraid a blush covered my face when, in the account of Mr. Cowan's visit, where that cultivated Englishman would be sure to see it, I found the word 'canine' used for dog or puppy." If Mr. Taylor will turn to the Standard Dictionary he will find canine as a noun, and meaning dog in just the sense I used it. The joke is on Mr. Taylor, and Mr. Cowan has the laugh. In the same manner he questions the use of some other words concerning which there is a difference of opinion among authorities; but there is no use in discussing them here.

No wonder Editor Hutchinson raised the question whether Mr. Taylor were hypercritical or not. He who sits in judgment over his

\*Earliest for earlier.

fellows should not forget that there may be differences of opinion in the use of language. There is a poetic license, and there is also a license in the use of prose. A limited use of new words may not be in bad taste. Some of the very words that the critic classes as slang, the Standard Dictionary recognizes as colloquialisms. That being the case, the journals have not been as "slangy" as Mr. T. appears to think.

I bear no ill feeling toward Mr. Taylor, and I am sure he in turn entertains none toward me, for I take it that he likes straightforward, open expressions of opinion, even if it does strike back. If this little discussion shall result in cleaner diction for all the bee-journals, we shall have Mr. Taylor to thank; but we shall not forget that he has been hypercritical and hardly up to the latest authorities.

I greatly enjoy Mr. Taylor's criticisms when confined to the theories and practices of his brother bee-keepers; and, barring the fact that I think he is not quite fair in quoting those with whom he differs in opinion, I think his criticisms will be productive of good rather than otherwise. Yes, I enjoy having him come right out square against my advocacy of two-story hives; but in doing so he should not take me to task for opinions that I do not hold.

On page 282, regarding the disposition of large or small colonies to swarm, Mr. Taylor evidently does not understand my position. It appears that his bias (unconscious, no doubt) is so strong that he fails to see my idea. In a nutshell it is this: A large colony in a large hive swarms less than a moderate-sized colony (say eight-frame) in a moderate-sized hive. Mr. Taylor uses, or did use, eight-frame hives. Of course, a large colony in such a hive, if given but one brood-nest, would be likely to swarm before one of smaller size. Right here I would agree with him.

On the same page, referring to what I wrote on page 630 of GLEANINGS, he says I still fail to answer his question given on page 243 of the *Review*. Well, I'll try again. I was referring to my practice with strong and medium-strong colonies, which is this: If the former are very strong, I let them have the two stories clear through the season; and if the others (medium strong) are not strong enough I remove the upper stories from them, and put in their places supers with sections. Mr. Taylor did not understand, and then asked: "Is he comparing those very strong colonies that he allows two stories with those of medium strength that he contracts to one story? If so we are very close together." Yes, that is just what I was doing.

#### A GENERAL VIEW OF THE OMAHA CONVENTION.

THE Omaha convention has now gone into history. While the attendance was considerably below what we had every reason to expect, from the low railroad rates offered, yet the prominence and representative character of those who did attend, and the quality of

the discussion, more than made up for the numerical deficiency. A marked feature was the entire absence of any thing in the line of personal grievances or strife. Indeed, I did not notice an unpleasant fling thrown out at any one in any of the discussions. Of course, there was the usual good-natured bantering from such men as Dr. Miller, Dr. Mason, Hon. E. Whitcomb, and L. Stilson. If at any time the discussion began to drag, one of the quartet was almost sure to throw in a bomb-shell (joke) that would wake every one up. No convention would be complete without one or more of these fun-makers.

The weather was delightful, the convention hall commodious and comfortable. We were right royally welcomed, not only by the Nebraska bee-keepers, but by ex-Governor Saunders, who honored the association by his presence.

Much valuable work was done by the convention, especially with reference to tackling this great question of adulteration. An interesting report by General Manager Secor, of the United States Bee-keepers' Union, showed that some very good work had been done in the line of pure food, and in defending bee-keepers in their rights. Considerable discussion followed the reading of this paper, resulting in the recommendation that the Union begin securing evidence against the mixers, and place such evidence before the proper authorities, whose business it is to assume costs of suits.

At a subsequent meeting of the Board of Directors it was proposed to begin work in whatever field would yield the best results in the judgment of the General Manager.

The last session of the convention was held in Apicultural Building on the exposition grounds. It was largely attended, and, after some impromptu speech-making by one of the officials of the exposition, in the form of a welcome to the bee-keepers, and responses from Mr. Abbott and Dr. C. C. Miller, we were treated to a feast of melons furnished by one of the exhibitors of honey, himself also a melon-grower. After a vote of thanks the convention adjourned to meet at the call of the Executive Committee.

A competent court stenographer was engaged to take down the whole proceedings of the convention, and very fortunately this stenographer was also a bee-keeper; so it is fair to assume that there will be an accurate report of all the proceedings. These will be given in the *Am. Bee Journal*. GLEANINGS will give only a condensed report, as usual, and this report will be in the nature of editorial snapshots given from time to time.

#### THE OMAHA EXPOSITION.

This is really worth going to see. While not as large, of course, as the World's Fair, yet what there is of it is fully its equal, except, perhaps, in the mechanical department. In the line of agriculture it surpasses the exhibit (perhaps not in size) at the World's Fair. The buildings arranged around the beautiful lagoon present a view either night or day that equals any single view at the great Chicago show.



## STARTING OUT FROM WILLOW CAMP.

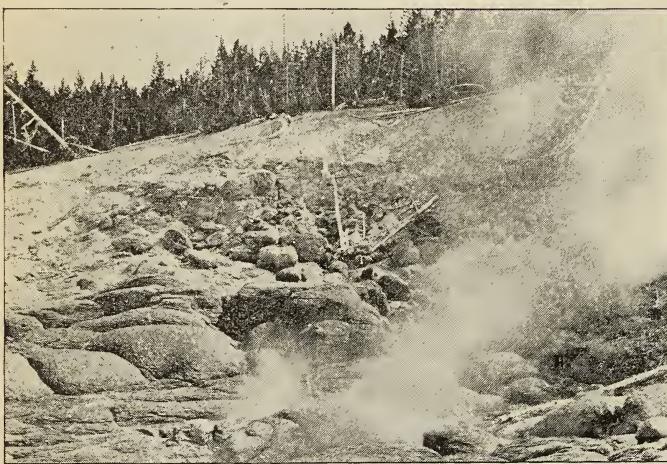
Of course I was up bright and early next morning, and I believe I was the first one at the breakfast-table; and as it was a good deal less trouble to spring on to my wheel than to get a great coach loaded up, I was out exploring considerably in advance of the rest of the party. Not far from the camp the road wound close to the base of Obsidian Cliff. This is a mountain of rocks, but the rocks are what I should call black glass. In the morning there was nothing particularly remarkable about them—that is, so far as the appearance at a distance was concerned; but on my return trip, when the western sun struck the face of the cliff right over my head, then it glistened like a thousand mirrors. The glass is opaque, and jet black, although there are occasional streaks of other colors. In order to make a

for ages past got their material for flint arrowheads from these obsidian cliffs, and chips of this very rock are found around their camping-places for miles in every direction.

Beaver Lake is on the opposite side of the roadway from the cliffs. As Uncle Sam forbids meddling, not only with the ducks and geese, but beavers too, the latter are there at work building their dams and houses, unmolested, just as they did before our forefathers disturbed them in their rural industry of building houses and doing the plastering with their trowel-like tails. It seems funny to pass ducks and geese that do not fly away, even when you go up near enough to reach them with a fish-pole.

A little further on is Roaring Mountain, so called because of the steam that issues with a roaring sound from its summit. This was the first glimpse we had of steam under pressure. A little further along we came to the "Devil's Frying-pan." The steam here comes out in a great number of little fissures over perhaps a quarter of an acre of ground. As you stand in the midst of it the hissing and sputtering are for all the world like frying meat—hence the name—Frying-pan. After these frying-pans there were so many wonderful things to see that I hope you will excuse me if I do get things a little mixed up in regard to locality.

The first sight of any thing that really looked like a geyser was a big boiling spring by the side of the road. This spring boils up, I should say, about as high as one's head—sometimes higher, and sometimes lower. It looks just like water boiling in a kettle, only the color is a beautiful indigo blue, clear as crystal, but as blue as the sky after a thunder-shower. I said at the time that this spring itself was worth a



CRATER OF THE MONARCH.

roadway along the base they built great fires against the huge glass, and then broke it into fragments by dashing water upon it. The road is, therefore, made of pulverized glass, and it is said to be the only one of the kind in the world. The pieces looked so sharp and flinty that I got off and walked. I was afraid for my rubber tires, and then I wanted to examine it more critically. You may wonder where the roadmakers got the fuel to heat the glass. Why, bless your heart, the greater part of Yellowstone Park is just covered with dead pine-trees. In fact, many of the forests are so filled up with pine and spruce trunks that never rot—or at least do not for a long while—that a horse can hardly be ridden through them; and these pine trunks will furnish fuel for years to come for campers and everybody else. We are told that the Indians

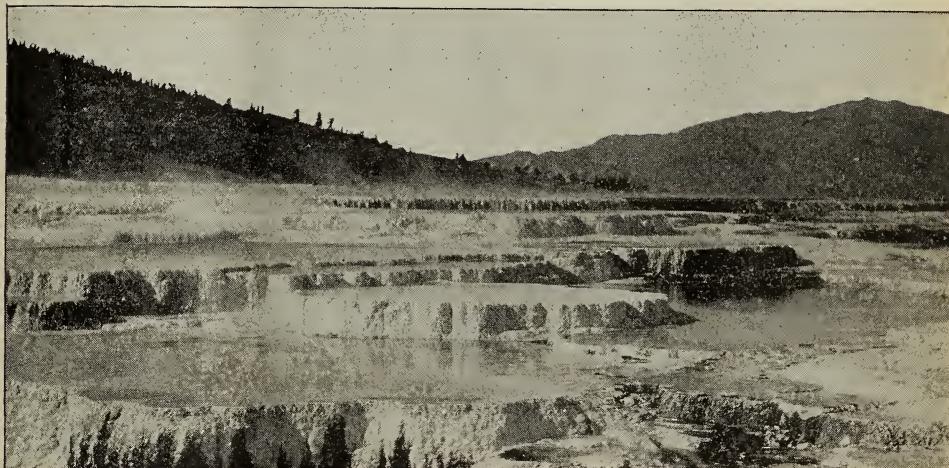
whole visit to the park; and I think I could have walked around and watched it play for hours, without being tired. I notice by the guide book that this Congress Spring, as it is called, throws the water, during occasional demonstrations, from fifteen to twenty feet high; so you see I have not exaggerated at all.

Before going further, candor compels me to state that I left my wheel at Norris. This is a point where we begin to go around a loop, striking the same place on our return two or three days later. There were several reasons why I reluctantly left my wheel, but the principal one was because my wind did not seem to hold out when I got about 7000 feet above sea-level; and I rather think that imbibing so much Apollinaris water was not favorable to the development of muscular strength. There

is another little circumstance I might mention. The carriage containing the friends who camped with us the evening before over-hauled me, and urged me to occupy the vacant seat and go along with them. There were some very bright, entertaining *ladies* in the crowd, and they *too* intimated my presence would be agreeable, and—why, you see when one sees these wonderful things all alone by himself he wants somebody to talk to. Well, you will have to picture me for the next three or four days in company with a crowd of nice people, and having a very good time.

A little further on we came to the first real geyser, called Constant. This little geyser goes off every minute, throwing jets of water forty feet into the air. As most of the water runs right back into the crater, where it came out, very little runs away. The Black Growler, a little further on, claimed my attention to such an extent that our party got clear out of sight. This geyser throws but very little

Nobody can tell when the Monarch will "go off," for it is anywhere from three or four to twelve hours. The crater consists of two oval-shaped wells. When it is quiet you can look down and see the steam coming up for perhaps a distance of fifty feet down. It plays with a series of explosions. I will tell you how I know. I ventured nearer than any of the rest of the party, and was peering down into its awful depths. Several of the party called out to me, saying I had better look out. I thought I heard an unusual disturbance down there, and wanted to see how it commenced. The driver said we might have to wait all day, and guessed we had better go on. I was standing right where that person is, of whom you can just get a glimpse through the steam. Before I had really got to a safe distance I heard a tremendous noise, and the water came flying out about as quick as if somebody had touched off a cannon down in the bottom of the well. Before the first charge



JUPITER TERRACE, MAMMOTH HOT SPRINGS.

water—just enough, in fact, to lay the dust nicely in the road that runs close to it; but it throws out two jets of steam with such a roar that you can not hear anybody talk. It comes with puffs and brief explosions that make it all the more frightful. A little to the north of it is one called Hurricane; and those two together are enough to scare anybody, let alone the horses to the coach; but they seem to have become accustomed to it by their weekly trips close to the puffing steam. There is steam enough here to run a good-sized engine, without any trouble. The way it threw up a stick I laid across the crater would look as if there were pressure enough. Emerald Pool is a handsome emerald-tinted spring, 40x50 feet in size. Its walls are ornamented with beautiful sulphur-colored coral. The Monarch Geyser, of which I give a cut on the preceding page, is the largest in Norris Basin.

had got well started, off went another, sending a volley of clouds of boiling water something like 100 feet high. There were great quantities of drops of water shining in the sun, like drops of rain; but as these are boiling hot they go up and up until they turn into steam, and so do not come down at all. But chunks of water, if I may use the term, go up that do come down.

A little further we get our first glimpse of the Paint Pots. In these the mud is mixed up with the boiling water; and it is about the smoothest and most plastic mud you ever saw or heard of. Somebody said it was no wonder it was nice mortar, for Nature had been working it over and over for perhaps—how long do you suppose? Why, perhaps ten thousand years. Each puff of steam throws up a thick mud that settles back in the form of a ring. Then another one follows, and you have something like a full-blown rose. It

may be the color of a rose, or it may be green or blue, or white as whitewash. Some of the mud geysers make a figure every now and then that is strikingly like a calla lily: You see, if the bubble of steam shoots off at an angle, instead of going straight up, we have a blossom with a point at one side like the calla lily; and this remains until another bubble of steam makes another blossom of some kind. Sometimes it is a very pretty morning-glory, color and all.

You had better confine your meanderings to where you see people have been walking. If you do not, you may get into mud that is more objectionable than any thing you ever had any experience with before. At various points through the canyon we meet with these "paint pots," or mud springs; but the description I have given will answer for most of them.

One of the most appalling sights in the way of geysers or hot springs is Excelsior Geyser.

the brink, and be precipitated into this terrible lake of boiling, steaming water. This place has been known as Hell's Half Acre; and it seemed to me as though the government ought to put up a fence around this dangerous place, with notice to visitors to beware. We are told this has, in times past, been subject to eruptions where a great column of water toward fifty or more feet across has been hurled hundreds of feet high. Turquoise Spring is a silent pool about 100 feet in diameter. It is so named on account of the exquisite color of the water, and the brilliant hues of the sides and bottom which are so plainly visible. Prismatic Lake is said to be the largest of the brilliant springs, being from 300 to 400 feet in diameter. In the center the water seems to be blue, turning to green toward the margin, while some other portions of it seem to be yellow. I presume this is caused somewhat by the distance or depth of the water through which you look. In addition to this the sides and bottom are shaded with most tantalizing colors. May be "tantalizing" is not exactly the word, but it conveys the meaning better than any other word I know. The clouds of steam hinder one from getting a full glimpse of its wonderful beauty, unless you get the sun at just the right angle, and wait quite a time for the steam to be wafted away.

Since writing my description of the terraces at Mammoth Springs, in our last issue, I have secured a cut (see preceding page) that in many respects is quite an improvement over



MUSHROOM SPRING, FOUNTAIN BASIN.

It is a great well, or abyss, something like 300 feet long and 200 feet wide. The water is of a deep blue, boiling all the time. The surface is 15 or 20 feet below the ground; and the walls, almost clear around it, are perpendicular or hollowed out under the edge, so it seems likely the brink may at any time break off and fall in. This great geyser is so full of steam that a good deal of the time you can not get a glimpse of the surface of the water. Once in a while, however, the wind blows the steam off to one side. Somebody cautioned me, as I was walking pretty close to the edge of this frightful chasm. As the ground looked hard and firm, however, I did not feel much troubled about it until the wind blew the steam away, and I looked back to where I had just been standing, and saw the earth had been washed out underneath, like a cave; and the soil looked so loose and sandy under that apparently firm ground that it seems as if one's weight might cause it to crumble off. Suppose a crowd of people should go up to

the one on page 699 of last issue. It shows very plainly the way in which the walls around these separate pools are filled up by the mineral deposit. The spring probably bursts out very near the foot of the hills in the background; then as the water overflows each pool in succession it forms the beautiful scalloped-edge basin. Most of this formation is hard enough so you can walk around by stepping on the edges of the basin. Be careful, however, that you do not slip off into the boiling water. Steam is constantly ascending from most of these pools, and sometimes it obstructs the view; but when a gentle breeze wafts away the vapor, and permits the sunshine to go away down into its shining depths of crystal water, you have a glimpse that is wonderfully entrancing. While many of the springs are bubbling and boiling, there are others that are so quiet one can hardly believe the surface is not a beautifully polished mirror. I give you a glimpse of one of these quiet springs. See cut above. Now, this pic-

ture does not give you a glimpse of the depth and expanse away down under the surface. Oftentimes beautiful caverns with coral-like pillars open out away off under ground.

HOW THE PEOPLE OF NEW JERSEY THREW OFF  
THE SHACKLES, AND GOT THE UPPER  
HAND OF THE GAMBLERS AND  
WHISKY-MEN.

In our issue for Feb. 1st, p. 104, I told something about what the Law and Order League of Connecticut had succeeded in doing. At a recent temperance meeting in our town, Rev. J. C. Jackson, one of the lecturers of the Anti-saloon League, gave an account of a similar work in New Jersey. I was so much pleased with it I asked him to give a brief outline of that part of his talk. He has done so, and I submit it below, hoping these illustrations may be an encouragement for other States where the good people are being snowed under by outlaws and criminals.

The case of the deliverance of New Jersey from corrupt political rule is full of encouragement for all those who are working in the cause of civic righteousness. I refer to the popular uprising against the ring of gamblers, ballot-box stuffers, and political corruptionists who were overthrown there a few years ago. For twenty-five years this ring had practically (politically speaking) owned New Jersey.

By stringent legislation New York had forced the great majority of its race-track gamblers to emigrate across the Hudson. The crusade against the Louisiana Lottery had also resulted in many of the corrupt creatures who had been connected with that and kindred enterprises transferring their activities to Jersey City. The chief "greengoods" operators of the United States generally made their headquarters at Taylor's Hotel, a few numbers up Montgomery Street from the Jersey City Ferry. These forces of evil, I say, practically ruled the State. They elected legislatures who did their bidding; and if it was necessary to manufacture a fraudulent majority, it was furnished by armed bands of thugs and repeaters from New York who made the rounds of the polling-places in Elizabeth, Paterson, and Jersey City toward evening on election days. There were polling-places where no decent citizen dared show himself on election days after 4 o'clock. The ring controlled the railroad influence in legislation. The race-track managers and gamblers had set up their establishments at Guttenberg, Clifton, Linden, and at the great national race-course at Monmouth, and, through the enormous crowds attracted to the races, were able to secure the favor of the railroad companies.

There were just two things in New Jersey the gamblers did not own. They did not own that grand incorruptible judiciary which has made "Jersey justice" a synonym for stern, unflinching integrity, throughout the Union. And they did not own the great masses of the honest common people of the State, whose hearts were true to righteousness. After our people had groaned under this tyranny for a quarter of a century they began to take steps to throw it off.

On a certain day we went by thousands to Trenton to beg the legislature to do something to free us from this thralldom. We went from all the churches, from the boards of trade, reform organizations, citizens' leagues, and the like. But (would you believe it?) the sergeant-at-arms of the legislature was the creature of the race-track gamblers, and, with the consent of the legislature, shut the doors and locked them in our faces. We were denied the right of petition.

Then the hearts of the sons of those old Jersey Revolutionary fathers who had fought at Brandywine and Trenton and Monmouth took fire with moral indignation. They went home and set New Jersey on fire from Sussex to Cape May. We came out from our little prayer-meetings (we had prayed long enough), and gathered in great mass-meetings in our largest churches. I recollect that, in Jersey City, we met in Dr. Scudder's great tabernacle, which held a vast multitude of people. Over one side of the arch above

the altar we put a black list of the legislators from our town who had misrepresented us, and whom the religious and moral people were to vote against at the next election, and down the other side the names of candidates for the legislature whom we knew we could trust. We sent over for Dr. Parkhurst, from New York, and he came across and sounded the key-note for us one night. Then we went into a hot campaign to revolutionize things for righteousness over the State. Party lines vanished. There were no longer Democrats, Republicans, or Prohibitionists; it was decency against indecency; morality against immorality; light against darkness; God against Satan; heaven against hell.

When election day was over we found that we had swept the enemy before us everywhere, as one of those Atlantic cyclones that comes up the Jersey coast in the fall clears everything from its paths. Oh how the people rejoiced! At Paterson they climbed to the top of the Orange Mountains, just back of the city, where Washington's troops were encamped during the Revolution, and there on the top of those mountains, just where the old patriot army built its bonfires of rejoicing the night after the conquered British sailed out of New York for England at the close of the Revolution, our people built bonfires. They shined far out over the Atlantic, and the sailors a hundred miles away on the ocean asked, "What's going on over on the Jersey shore?" Next day, when they sailed into New York harbor, they were answered, "They have smashed the gamblers and ballot-box stuffers in New Jersey." Then after our rejoicing came the day of judgment for the tyrants who had so long lorded it over us. In one day I saw thirty-two (if I recall correctly) of the former political bosses and ward managers and ballot-box stuffers of Jersey City brought into court and sentenced to heavy fines and good long terms of imprisonment in the penitentiary at Trenton. Their friends had brought up hacks to take them down in state to the Pennsylvania depot on the road. The judge saw the hacks, and said, "None of that, Mr. Sheriff: bring some open street-cars up here; handcuff those men; load them in and take them to the railroad station." So they went down in open street-cars, in full sight of the whole city which they had so long outraged. When they were safely in the penitentiary, New Jersey drew a long breath of relief. For the first time in twenty-five years she sat redeemed, purified, and free. She had broken the evil power that held her in its grasp; and now she has incorporated in her constitution that there shall be no more gambling within her borders, not even at church socials.

I covet for Ohio such an opportunity of breaking the power of the beastly abomination of the liquor-traffic which has so long held us in subjection. That opportunity will some day come. The people are growing more and more restless and angry under the tyranny of the saloon, and in some supreme hour of exasperation they will arouse themselves and break the chains which have so long bound them.



REMEDIES FOR BORERS IN FRUIT-TREES;  
RABBITS, MICE, ETC.

For some time past we have been receiving flaming circulars in regard to new inventions in the way of tree-paint, etc. These circulars tell how much money can be made in a day by visiting farmers, and urging everybody to go into it. I forwarded one of them to one of our Ohio Experiment Station people, for his opinion. Here it is:

*A. I. Root*:—I know nothing about Brown's Tree Paint, but I should hesitate to use it extensively until assured that it would not kill the trees. It will probably keep the rabbits from gnawing the trees, but I doubt its value to keep out borers. If it has been fully tested it ought to be better known, and we would have heard it through the regular channels;

besides, there ought to be some names given of persons who are recognized as *authorities*, and who have given it a trial. It may be a good thing; but I say, let us have some proof of its value. W. J. GREEN.

Wooster, O., July 28.

I wish particularly to emphasize the point that Mr. Green makes. These fellows have a host of testimonials, but they are all from somebody whom nobody knows any thing about. They do not come from our experiment stations, nor from men engaged largely in fruit-growing, nor from our prominent writers on the subject. The worst part of it is, so many of these things that have been loudly puffed have killed the trees sometimes by the hundreds. Below is a letter from one of our subscribers; and as our friend has no pecuniary interest in the matter, we can not for a moment doubt his statement. I shall be glad indeed if our experiment station would tell us what they know about it. It is cheap, and easily applied. If friend Barr has used it eight years, without any injury to his trees, I think we are pretty safe in using it.

If your apple-trees are bothered with borers, use gas tar, and you will have no further bother. I use a little swab—tie rag 'round a little stick; use that in place of a brush; put the tar about 2 inches below the ground and up on the trunk of the tree a foot or 18 inches. That is proof against borers, mice, and rabbits. No rain will wash it off, but it must be put on every spring. The tree expands, and that leaves cracks for the borers.

I use it on apples, peaches, plums, and cherries. If I were there to talk to you I could tell you what trouble I had before I used the gas tar. Put it on the ones that you have cut the worst, and take the borers out, and you will be surprised to see how fast they will heal up. I have used it for 8 years. B. F. BARR.

Flagler, Iowa., Aug. 8.

#### SOME QUESTIONS ABOUT GROWING TOMATOES.

What are the best varieties of tomatoes? Does it pay to grow extra-early varieties when they are so small and worthless, for the sake of having them a few days or weeks earlier? Is there a better tomato than the Ignotum or the Dwarf Champion? By sowing the seed, say by January 1, how early can we have ripe tomatoes?

JOHN MAJOR.

Cokeville, Pa., Aug. 15.

There are now such a great number of really good tomatoes it is a pretty hard matter to say which is best. The kinds you mention are probably as good as any for general purposes. The Dwarf Champion is a strong grower, stands up well, is quite early, and the tomatoes are as handsome as any known, but they are not of very good size. The Ignotum is about as large as any good-shape tomato. While the color is not quite equal to that of the Dwarf Champion—that is, in the opinion of some people—it is one of the very best all-round tomatoes.

Your next question depends upon the market. We have sometimes got about as much money for the small early tomatoes, say the Earliest in the World, as for the later ones, for people will often pay five and ten cents a quart for the first that come when they will hardly give the same price per *peck* when everybody else has them.

The answer to your last question will depend upon the greenhouse and the man who owns it. With every thing in tiptop shape you should have tomatoes in March from seed sown the first of January. We rarely get them under glass, however, until some time

in May; but our Ohio Experiment Station, I think, has produced nice tomatoes under glass every month in the winter. The tomato is very tender; and to make it fruit indoors the temperature of the greenhouse must be kept just right.

#### KEEPING EGYPTIAN ONION-SETS OVER WINTER.

This is the way I do: About this time, Aug. 15, I pick the sets, spread them out thin on the upstairs floor of my wagon-house, where they always get perfectly dry, and just let them alone until I get ready to plant in the spring. I plant in May. I do not cover them at all over winter. In sorting them over in the spring I always find some that are dried up, but not many. I think they are those that had long sprouts before they were gathered.

Lordstown, O.

H. A. SIMON.

#### REPORT FROM THE ACORN ONION-SET AND THE DARLING STRAWBERRY.

I bought a few acorn onion-sets of you last spring, and they are the finest onions I ever raised, especially the red ones. In regard to Darling strawberries sent out, I got one runner plant, and not a berry, but they are making an immense growth, very strong, and lots of runners this year; but I shall not bother with them any more, as I think they are too much on the "Michel's Early" order.

EUGENE MANNING.

Jacksonville, N. Y., Aug. 5.

#### MORE ABOUT THE PAPAYA OR MELON-TREE.

Papaya is one of the most valuable remedies known in the cure of stricture. It digests and dissolves lymphatic growths, without irritation. R. R. HARRIS.

Bloomingville, Erie Co., Ohio, Aug. 5.

You would be very much interested to see three papaya-trees that have come up in the back yard just by the banana. They are from the seeds of the first papaya you ate when here in February. One of the trees is  $4\frac{1}{2}$  feet high, and has blossoms on it. You remember that General Hastings said they required eighteen months to fruit. I have been asked by McIntyre, of California, whether the tree would grow with him in Sespe Canyon. It won't stand frost, but it might be possible to grow them under glass for two months, setting them out as soon as frost is over, and getting fruit same year. If they were all as smart as Miss Cornish's tree they might be grown in Kentucky.

W. K. MORRISON.

Devonshire, Bermuda, Aug. 31.

#### ROBBING SICK PEOPLE.

On page 595 I mentioned the fact that I was going to send our Ohio Food Commissioner the article in question. Below is his reply in regard to the matter:

*Mr. Root:*—I have read with interest your article entitled "Robbing Sick People." If the practice to which you refer is considered a crime, what shall we say of those who drug soothing-syrups and emulsions with cocaine, morphine, and chloral, and sell them for harmless vegetable remedies? This practice is one of the most serious and dangerous of which I have any knowledge, and ought to receive the condemnation of every law-abiding citizen of the United States.

J. E. BLACKBURN,  
Ohio Dairy and Food Commissioner.

Columbus, O., Aug. 10.

Since the above was written I have read in some of the papers that a patent-medicine firm in New York had sued Commissioner Blackburn for \$200,000 damages. Let us see to it, friends, that our experiment stations, food commissioners, and other like public officials, have our hearty encouragement and support in this matter of exposing and driving out those who would sacrifice life, property, and every thing else, in their greed for ill-gotten gains.

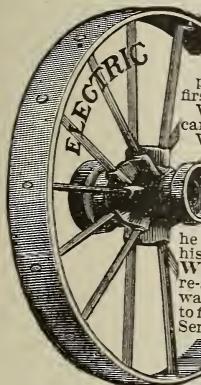
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thousands of them are **MAKING MONEY** out of eggs. It's pleasant and profitable. They double the egg product by feeding Green Cut Bone and Granite Crystal Grit. **MANN'S NEW BONE CUTTERS** cut fast, fine and so easy that any woman can work them. **Mann's Clover Cutters** and **Swinging Feed Trays** pay big for their investment. Cash or Instalments. Send for our free illustrated catalogue. **F. W. MANN CO., Box 37, Milford, Mass.**



**WHAT**

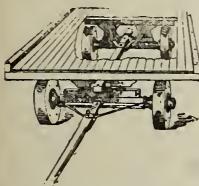


part of a wagon wears out first? The wheels, of course. Why not buy wheels that can't wear out? When a man buys the **ELECTRIC WHEELS**

he always has good wheels on his wagon. They can't Rot, Warp or become Loose; no re-setting of tires; they fit any wagon. We also make wheels to fit anything wearing wheels. Send for circulars and prices. **Electric Wheel Co., Box 95, Quincy, Ills.**

In writing, mention Gleanings.

### Low-down Broad-tire Farm Trucks



originated with us, and we still sell direct to farmers three-fourths of all that are used. We build ten styles of farm wagons, extra wheels for old wagons, and milk-peddler's wagons. Steel-wheel trucks, \$18.

**Farmers Handy Wagon Co., Saginaw, Mich.**  
In writing, mention Gleanings.

**DON'T SWEAR** as you did last season that you will buy an Incubator and then not do it. Nothing like starting right. If you want to start right and stay right buy the **Reliable Incubator.**



Made so the veriest novice can't fail with it. Light the lamp, the Reliable does the rest. We send a 224 page book for 10c in stamps that tells all about it and the Reliable Poultry Farm. **RELIABLE INCB. & BROODER CO. Box B 49, Quincy, Ill.**



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**BEE SUPPLIES.**

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Pouder's Honey-Jars and every thing used by bee-keepers. Low freight rates; prompt service. Catalog free.

**WALTER S. POUDER,**  
512 Mass. Ave., Indianapolis, Ind.  
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Golden Italian Queens; virgin, 30c; 4 for \$1.00.  
**Gardiner L. Ellis, Millsboro, Del.**

### FOR SALE OR TRADE CHEAP.

1 Automatic cutter-head, to cut entrance in sections.  
1 V-grooving machine, " V-groove "  
1 Dovetailing-machine, " Dovetail "  
1 Saw-table. All Root's make machines.

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We have the largest and finest flock of Pekins we have ever raised, and in order to reduce the number quickly we will for a short time sell in lots of five or more at \$1.00 each. They are the genuine long-bodied Pekins, and will surely please. Order quick.

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Largest and cheapest stock of Poultry Supplies in the United States; patented and manufacturer of New American Incubator and Brooder. Pure-bred poultry at living prices. Send for our catalogue. It's a pretty book of 80 pages, finely illustrated, full of information. You need it. It's free. Address

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Also Southern Bloodhounds.

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In writing, mention GLEANINGS.

**The A. I. Root Co.'s Goods At Their Prices.**

Including their discounts for goods wanted for use another season. It will pay you to send me list of goods wanted.

**M. H. HUNT, Bell Branch, Mich.**  
In writing, mention GLEANINGS.

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Buy good stock. The best is the cheapest. Nuclei, full colonies, and queens a specialty. Have been breeding queens for the trade 14 years. Untested, 75c; 3 or more, 65c each. Send for 40-page catalog, information to beginners, etc., free.

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### Honey-jars.

1-lb. square, \$1.60 gross.

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Low price on quantities.

### Apiarian Supplies.

Bees and Queens.

Pure Honey.

**I. J. Stringham,**

105 Park Place, New York.

In writing, mention Gleanings.



## EXTRACTED HONEY.

We are entirely sold out of California honey, both water-white and light amber. We have choice Wisconsin clover and basswood mixed, in 60-lb. cans, at \$9.00 per case of 120 lbs.; in gallon cans at \$1.00 per gallon; 6 gallons for \$5.70. We have also southern amber honey in 60-lb. cans, at \$7.20 per case of 120 lbs. Samples free to intending purchasers.

## FACTORY IMPROVEMENTS.

The delivery of our new engine has been delayed till the middle of October, so that we shall not shut down till then, and it is likely to be toward the middle of November before we start the new engine. We expect to continue one of our present engines driving a part of the machinery in the wood-working building during most of the time when the changes are being made. If in need of any odd sizes or special work before December, let us hear from you promptly.

## THE DANZENBAKER HIVE.

Mr. Danzenbaker brings us many favorable reports and suggestions relating to his hives and plain sections, from those who have been using them from one to three years. His hives may be furnished with open end, or reversible style of Hoffman brood-frames, being supported with iron lugs at the center of the end-bars. As many orders for his hives could not be filled in time during the rush this past season, he will consider it a special favor if those intending to use them for 1899 will write to him their preference for style of brood-frames, and the number of hives they may need, that a full stock may be ready when wanted.

He has also a few hundred copies of "Facts about Bees," for 1898, on hand, that may be had for a 2-cent stamp of The A. I. Root Co., or F. Danzenbaker, Box 66, Washington, D. C.

## HONEY MARKET.

We are having a brisk demand for honey, and it is not an easy matter to find sufficient choice honey to supply the demand. We now have a number of un-filled orders on hand, and no honey to supply them. We have quite a little honey engaged, but it is slow in arriving. We hope to have soon a supply from the West. Visiting the Cleveland market recently I found it bare of honey, and dealers there have been taking of us every available lot. Inquiries and orders from other Ohio cities show a scarcity of honey. Much of the honey we do get is somewhat inferior in quality. All the sources from which we get information show a short crop, and the demand should stiffen up prices to a greater extent than many of the market reports are yet showing. We should like to hear from those having choice comb honey in excess of their requirements for the home market. Give description, and state price at which you offer it. We could place two or three carloads to good advantage in this State, if the parties are not supplied soon from some other source.

## Special Notices by A. I. Root.

## POTATOES FOR SEED OR TABLE USE.

We can now furnish very fair New Queen, State of Maine, and Rural New Yorker potatoes at 75 cts. per bushel or \$2.00 per barrel. Other kinds may be equally low later on.

## ALSIKE CLOVER SEED WANTED.

Will the friends who have new seed for sale please mail us samples, and tell what they want for it? I believe the market is at present a little unsettled, and will be until the new crop is more fully on the market.

## THE NEW TOMATO, FANCY FORDHOOK.

Just now we are getting a magnificent crop of large-sized, bright-red, smooth handsome tomatoes from the Fancy Fordhook. They, too, were put on exceed-

ingly rich ground, but they bore an immense crop of fruit instead of running up to vines, as many of the varieties would under the circumstances. My impression is now that the new tomato has come to stay. It is very much like the Dwarf Champion, only the vines stand up better, and the tomatoes are larger.

## THE RENOVATOR COW PEAS.

So many have asked for a few seeds of these that we have decided to send them out in five-cent packages. In each package will be a section of the pod, to show you how they grow. As I am not much acquainted with the various kinds of cow peas, I am not prepared to say how far this one differs from others that may be in the market. But this thing is certainly true: It ripens seed, in our locality, even when planted late in June, and it makes an enormous amount of foliage. In our next we will give an article on cow peas in various localities, both north and south, by J. W. Day, of Crystal Springs, Miss., author of the Tomato Book. These cow peas are enormously prolific. Friend Day tells us of one single vine that grew over a peach-tree, and produced the enormous number of between 200 and 300 pods.

## BURPEE'S BUSH LIMA BEANS.

My impression is that W. Atlee Burpee has never received the expression of gratitude from the whole wide world that he ought to have for the favor he conferred on humanity when he gave us the bush lima bean. At the time it first came out, there were some complaints to the effect that it still persisted in sending out vines; and I myself expressed the opinion, not more than one year ago, that it needed a dry season to perfect the pods down so near the ground. Last spring we neglected to plant ours at the proper time, and so it was put off till there was no ground available except some of our very richest strawberry ground, and then we had room for only two long rows. I was going to tell the boys to put them a good piece apart, as the ground was so exceedingly rich; but before I knew it they had planted four seeds in a hill, and the hills were not more than 2 feet apart. But they were in single rows, between rows of other stuff that was all out of the way by the time the beans were ready to bear, so the sun could get on each side of the row. Well, the rows at present look like a hedge fence; and although we have had extremely wet and hot weather during August and September, there is the greatest crop of lima beans on that small area I ever saw, even on poles, and the quality is surely equal to that of any other lima bean ever grown. It is true, some of them sent out vines, perhaps a yard or so long; but these did not seem to do any harm. We have been having lima beans for dinner almost every day for almost a month, if not more, and yet nobody seems tired of them. My opinion just now is that every family in the land should have a row or two of bush lima beans; and, judging from this season's experience, I will say you need not be a bit afraid of getting the ground too rich.

## A BEE-KEEPER WHO GROWS MELONS, AND A MELON-GROWER WHO KEEPS BEES.

On p. 737 Ernest speaks briefly of the feast of melons. May I enlarge a little on the subject? The melons we sampled were grown at Rocky Ford, Colorado. I had been eating a good deal of trash about that time, and I concluded I would not dare to even taste of the melons; but when I saw the rest having such a "picnic" I concluded I would just "sample" them, sick or no sick; and they were so exceedingly delicious that I really could not find a stopping-place, and, to my great and agreeable surprise, I was not sick a bit. Well, we made the melon-grower "stand up" and answer questions. We were especially interested in hearing him tell that he never succeeded in growing nice melons until he put bees enough in his melon-patch to fertilize all the blossoms. Now, may be I have made right here an awful mistake. If so, somebody will correct me; but, if I remember correctly, he said he had four hundred acres of melons, and that it takes at least 400 colonies of bees to fertilize them properly, and that it is now pretty clearly settled that you could not grow a large crop of nice melons without having bees in the melon-patch, say a good colony to every acre of melons. If you have never tasted a Rocky Ford melon, get one the very first chance you have, and agree with your old friend A. I. Root that there is not a nicer fruit on the face of the earth. I do not know why somebody did not think to get a Kodak view of the convention while the members were all having "rest and refreshment" with those crates of melons. After we had had all we wanted, the remnants were given to the Indi-

ans who held forth just back of Apicultural Building. By the way, I have an Indian story for the boys, saved up for our next issue.

#### HOME TALKS.

Owing to my absence from home, attending the convention at Omaha, together with a side trip to South Dakota, my usual Home talks will not appear in this issue; but the article on page 741 will have to take their place. Please be patient, friends, and I will give you plenty of Home talks in our next. In fact, I have a great lot of matter, gathered from my travels and elsewhere, that I am exceedingly anxious to give you. By the way, I feel greatly complimented to see that the *American Bee Journal* has copied my Home talk entire from the text, "Be sure your sin will find you out."

#### KIND WORDS FROM OUR CUSTOMERS.

The goods came to hand in first-class shape—the best lot of bee-goods I ever saw. I am greatly pleased.  
Moscow, Ont.

J. A. AMEY.

**CHAS ISRAEL & BRO.,**  
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#### Honey and Beeswax.

Liberal Advances made on Consignments.  
Wholesale Dealers and Commission Merchants.  
Established 1875.

In writing, mention Gleanings.

#### OUR STRAWBERRY-PLANTS.

The strawberry-plants came all right—the finest plants I ever saw shipped in the fall. After sundown I planted them out in freshly dug ground. I dug all the holes first, then filled them with water, then put in the plants. I shaded them from the hot sun, and watered them thoroughly every night, and they are doing finely. I can grow 100 quarts of berries from 50 plants. We have a splendid system of waterworks here. I have been growing strawberries for ten years.

J. W. THOMPSON.

Canton, S. D.

[We presume our friend means he can grow 100 quarts of berries from 50 plants set out in the fall. My impression is, that the plants should be put out in July—certainly not later than August; then it would not be very difficult to get two quarts of berries from the original plant and the young ones that can be grown around it during the fall. The great secret of securing such a result is, as our friend states, a perfect system of waterworks, so that the plants, old and young, may push right along without any interruption.]

#### QUEENS BY RETURN MAIL.

Daughters of best imported Italian queen mother, warranted purely mated to drones of imported stock from a different source; hence, a direct cross. Twelve years as a honey-producer on a large scale has taught me what good queens mean to the producer as well as how to rear them. Price of queens, 50 cts. each. Safe delivery and satisfaction, or money refunded.

L. H. ROBEY, Worthington, W. Va.

- IF you would like to see a picture and description of the finest honey-plant in the world, get the Bee-keepers' Review for July and September.
- IF you would like to know where to find the best honey-location, to see it described with pen and picture, read the September Review.
- IF you are interested in knowing the methods of our best queen-breeders, and would enjoy seeing some fine engravings upon the subject of queen-rearing, one of them a double-page picture, get the Review for August.
- IF you would like to learn how to so group and arrange your hives that they will occupy but little space, and yet give to each hive a distinctive location, see the article and diagram on this subject in the August Review.
- IF you are interested in knowing what is going on among bee-keepers across the ocean, read "Notes from Foreign Bee-journals," in the Bee-keepers' Review.
- IF you wish to see pointed out the errors and fallacious ideas that creep into current apicultural literature, get the Review and note the courage and ability with which Mr. R. L. Taylor conducts the Department of Criticism.
- IF you wish a bright, clean, clear-cut, sprightly, beautiful, illustrated, go-ahead, up-to-date, really helpful, useful bee-journal, subscribe for the Bee-keepers' Review.
- IF you are not now a subscriber, send me \$1.00, and I will send you 12 back numbers, the Review from the time your subscription is received to the end of 1898, and then for all of 1899. The sooner you subscribe the more you get.



**W. Z. HUTCHINSON, = = = Flint, Mich.**

#### BEE-SUPPLIES.

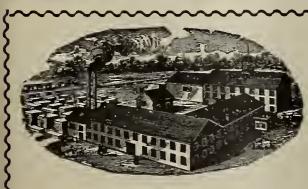
We have the best-equipped factory in the West. Capacity—one carload a day; and carry the largest stock and greatest variety of every thing needed in the apiary, assuring **best** goods at the **lowest** prices, and prompt shipment.

##### Illustrated Catalog, 72 Pages, Free.

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**Address E. KRETCHMER, Red Oak, Iowa.**

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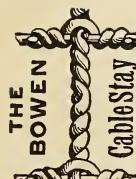
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grown on the bank of Lake Erie, two miles from any peach orchards and guaranteed free from Scale, Borers, Yellows, etc. Large stock of Pear, Plum, Cherry, Quince and immense supply of Small Fruit plants. Headquarters for Ornamental Trees and Shrubs. A quarter of a million of low down budded roses.

32 Greenhouses filled with Roses, Palms, Araucarias, Ficus, Dracennas, Pandanus, etc. Will have immense stocks of best Holland Bulbs for fall, 45th year. 1000 acres. Correspondence and personal inspection solicited.

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Box I, Painesville, Ohio.**

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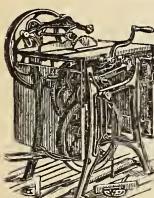
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No farm rights, royalties or patent stays to buy. AGENTS WANTED. Write for circular.

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In writing, mention GLEANINGS.



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**J. M. JENKINS, Wetumpka, Ala.**

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The only bee-paper in the United States edited exclusively in the interest of the farmer bee-keeper and the beginner is

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**FOR SALE.** Bound volumes of Bee-keepers' Review, American Apiculturist, and Farm Journal. For terms address L. H. LINDEMUTH, Lehmaster, Pa.

## IF YOU WANT BEES

that will just "roll" in the honey, and that are wonderful red-clover workers, also gentle to handle and exceedingly hardy, then try MOORE'S STRAIN OF ITALIANS, the result of 19 years of careful breeding. Warranted queens, 75 cts. each; 3 for \$2.00; per dozen, \$7.00; select warranted, \$1.00, tested, \$1.00; select tested, \$1.50; strong 3-frame nucleus, with select tested breeder, \$3.00; same with select warranted queen, \$2.50. Safe arrival and satisfaction guaranteed. Those who have never dealt with me I refer to A. I. Root, who has purchased of me over 900 queens. See what my customers have to say in my new circular, which is free for the asking.

**J. P. MOORE, Morgan, Pendleton Co., Ky.**

In writing advertisers, mention GLEANINGS.

**QUEENS.** Now is the time to re-queen, when you can get the best of queens from Daniel Wurth for 45 cts. each; 6 for \$2.65, or \$5.00 per dozen. Sent by return mail.

**DANIEL WURTH, Falmouth, Rush Co., Ind.**

## Honey.

If you want Colorado alfalfa, sweet clover and cleome honey, comb or extracted, correspond with the secretary of "The Colorado State Bee-keepers' Association," Our honey ranks high in quality. Car lots a specialty.

Address F. RAUCHFUSS, Elyria, Colo.

In writing, mention Gleanings.

**FOR SALE.** — Good ranch for bees and general farming near San Diego, California. Price very low to make a settlement. Address G. C. GEARN, 864 Fifth St., San Diego, Cal.

**FOR SALE.** Extracted clover honey at 6c, in 60-lb. tin cans. M. ISBELL, Norwich, N. Y.

I have 15 hybrid queens for sale at 25c each, or 5 for \$1.00. ALBERT HINES, Independence, Ia.

## Wants and Exchange.

**WANTED.**—To exchange for extracted honey, one trio of Buff Cochins, one trio of Light Brahmans (birds are pure bred), 1 Beagle hound (good hunter), shipping-cases, bee-hives, and sections.

J. M. KINZIE, Rochester, Oakland Co., Mich.

**WANTED.**—To buy quantity lots of fancy and No 1 white comb honey, car lots preferred.

BYRON WALKER, Evart, Mich.

**WANTED.**—The addresses of persons having cholera among their poultry.

CHAS. MCCLAVE,

New London, Ohio.

**WANTED.**—To exchange rifles and shotguns for incubators, relics, and fire-arms. Also wanted a shingle-mill.

WM. S. AMMON, Reading, Pa.

**WANTED.**—To sell cheap for cash or to exchange for any thing useful, St. Bernard puppies. Could use incubator, Poland-China sow, or registered Shropshire sheep.

W. W. PREVEY, Elroy, Wis.

**WANTED.**—To exchange Italian bees and queens, homing Antwerp, Blue, Blue Chequer, and Silver Dun, for Belgian hares, boys' bicycle, or offers.

W. E. FLOWER, Ashburne, Pa.

**WANTED.**—To exchange for white extracted honey a 6-inch Vandervoert fdn.-mill in good order; also dipping-tank.

WARD LAMKIN, Ledyard, N. Y.

**WANTED.**—No. 1 white comb honey in 4x5 inch sections; also to furnish my hives and 4x5 sections for a share of the next honey crop, to parties within 100 miles of this city. Address *at once*

F. DANZENBAKER, Washington, D. C.